

April 1952

house+home

edition

Illinois U Library

How to build on a hillside

Nine architects in five states demonstrate how to exploit difficult, sloping land (below and p. 82)

How steel skeleton for the White House

Modern construction saves a landmark—at a cost of \$5,761,000 to U.S. taxpayers (p. 108)

Building bargain houses

Phoenix points the way with lower prices, higher quality (p. 114)

Builder-house design

A cure for the epidemic of banana split facades (p. 122)

The heat pump

Now in production, a new application of an old principle (p. 126)

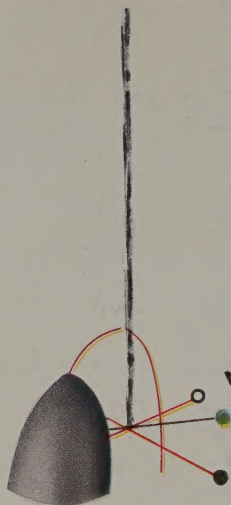
Low cost mass air conditioning

Dallas houses, selling at \$12,500, prove it can be done economically (p. 128)

Why furnish model houses ?

Decoration pays off as a strong selling tool (p. 134)

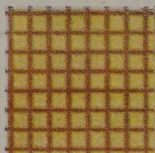




NEW BEAUTY

Ceratile

an exciting new medium
of creative design



SAND CHECK
In 4 1/4" or 6" tiles



BASKET WEAVE
In 4 1/4" or 6" tiles



CORAL
In 4 1/4" or 6" tiles



NEW
COLOR



ARAGON
In 4 1/4" or 6" tiles



REGENCY
In 4 1/4" or 6" tiles



SOUND WAVES
In 6" tiles only



LATTICE
In 4 1/4" or 6" tiles



HARLEQUIN
In 4 1/4" or 6" tiles



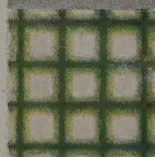
GINGHAM
In 4 1/4" or 6" tiles



TEAR DROP
In 4 1/4" tiles only



CANDY STRIPE
In 4 1/4" or 6" tiles



WINDOW PANE
In 4 1/4" or 6" tiles

Shown here are typical designs from the standard Ceratile group of 34 patterns, fast becoming the most accepted line of decorative tile in the country. Each is a wholly new concept in tile design, texture and color combination. Each is available now. You can get frostproof Ceratile for exterior use in freezing climates. We welcome your request for full information. Just write to Dept. HH-4.

THE CAMBRIDGE TILE MFG. CO. Authorized Distributors of Ceratile, P. O. Box 71, Cincinnati 15, Ohio
WEST COAST OFFICES • The Cambridge Tile Mfg. Co., 470 Alabama Street, San Francisco 10, California
• The Cambridge Tile Mfg. Co., 1335 South LaBrea, Los Angeles 19, California

EDITOR-IN-CHIEF Henry R. Luce
 PRESIDENT Roy E. Larsen
 EDITORIAL DIRECTOR John Shaw Billings

THE MAGAZINE OF BUILDING

ARCHITECTURAL FORUM Edition

and

THE MAGAZINE OF BUILDING

HOUSE & HOME Edition

EDITOR AND PUBLISHER

P. I. Prentice

EDITORIAL CHAIRMAN

Douglas Haskell, AIA

EXECUTIVE EDITORS

Joseph C. Hazen, Jr.

Suzanne Cleaves

ART DIRECTOR

Paul Grotz

ASSOCIATES: W. C. Bixby, Peter Blake, Curney Breckenfeld, Louise Cooper, Virginia Forsythe, James P. Gallagher, Mary Jane Lighdown, Walter McQuade, Harry J. Middleton, Carl Norcross, Boyce P. Price, Vernon Read, Richard Saunders (Washington), Ogden Tanner, Warren Unna. (In military service: Wilson Dizard.)

ASSISTANTS: Rosalind Klein Berlin, Marilyn Grayboff, Henry T. Martin, Alice O'Connor.

ART STAFF: Associate Directors, Amnon Rubinstein, Madelaine Thatcher. Assistants: Martha Blake, Linn Ericson, Jan V. White, Hannelore Teddie Wolff.

MARKET RESEARCH DIRECTOR: Arthur S. Goldman.

CONSULTANTS: Miles L. Colean, Ruth Goodhue.

CIRCULATION MANAGER: Walter F. Grueninger.

PRODUCTION MANAGER: Lawrence W. Mester.

GENERAL MANAGER

Robert W. Chastaney, Jr.

ADVERTISING DIRECTOR

George P. Shutt

ADVERTISING MANAGER

Richard N. Jones

THE MAGAZINE OF BUILDING, HOUSE & HOME Edition, is published monthly by TIME Inc., Time & Life Building, 9 Rockefeller Plaza, New York 20, N. Y. Yearly subscription payable in advance. To individuals or firms (and their employees) engaged in building—design, construction, finance, realty; material distribution, production or manufacture; government agencies and supervisory employees; teachers and students of architecture and trade associations connected with the building industry; advertisers and publishers: U.S.A., Possessions and Canada, \$5.50; Pan American Union and the Philippines, \$9.00; elsewhere, \$12.00. To those not connected with the building industry: U.S.A., Possessions, and Canada, \$9.00; elsewhere \$17.50. Single copies, if available, \$1. All copies mailed flat. Copyright under International Copyright Convention. All rights reserved under the Pan American Copyright Convention. Entered as second class matter January 11, 1952 at the Post Office at New York, N. Y. Copyright 1952 by TIME Inc.

TIME Inc. also publishes TIME, LIFE and FORTUNE. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President and Treasurer, Charles L. Stillman; Executive Vice President for Publishing, Howard Black; Vice Presidents, Allen Grover, Andrew Heiskell, C. D. Jackson, J. A. Linen, P. I. Prentice; Vice President and Secretary, D. W. Brumbaugh; Comptroller and Assistant Secretary, A. W. Carlson; Manager, MARCH OF TIME Division, A. R. Murphy.

58 LETTERS

72 BEHIND THE BLUEPRINTS

81 EDITORIAL

82 Nine hillside houses

85 1. In Sands Point, Long Island, N. Y. by Henry Hebbeln

90 2. In West Los Angeles, Calif. by Arthur B. Gallion and Calvin C. Straub

92 3. In Berkeley, Calif. by William Corlett

94 4. In St. Paul, Minn. by Norman Nagle

96 5. In Seattle, Wash. by Chiarelli & Kirk

98 6. In Fayetteville, Ark. by Edward D. Stone; Karl Holzinger Jr., associate

101 7. In Los Angeles, Calif. by Kenneth N. Lind

104 8. In Palo Alto, Calif. by Frederick E. Emmons and A. Quincy Jones Jr.

106 9. In Ryé, N. Y. by Henry Wright

108 The story of the White House remodeling

114 Phoenix: bargain city in the U.S. for homes

118 Hoffman of Phoenix

122 The banana split

126 Heat pump

128 Air conditioned houses for \$12,500

132 Gross-Morton shopping centers

134 Why and how the furnished model helps sell builders' houses

138 A new storage wall and a flexible truss

140 The sewerless toilet: The opinion of experts

144 REVIEWS

148 PRODUCT NEWS

180 TECHNICAL PUBLICATIONS

Cover: Apartment by Kenneth Lind, AIA; Photo by Shulman

Specify the best of

Redwood

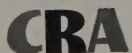
If, like so many contemporary architects, you're using more and more Redwood in your work, remember to specify **CRA Certified Dry Redwood**—the grade-marked, trade-marked Redwood that assures uniform beauty and stability.

An architect's jobs are as good as his materials—be sure with **CRA Redwood**.



LOS ANGELES COUNTY ROAD MAINTENANCE STATION
ARCHITECT: RICHARD J. NEUTRA, F. A. I. A.
PHOTOGRAPH: JULIUS SHULMAN

CALIFORNIA REDWOOD ASSOCIATION



Members: Northern Redwood Lumber Co. • Arcata Redwood Co. • Coastal Plywood & Timber Co. • Hammond Lumber Co. • Holmes Eureka Lumber Co. • The Pacific Lumber Co. • Rockport Redwood Co. • Simpson Logging Co. • Union Lumber Co. • Willits Redwood Products Co.

up 10 to 20% from the 1951 level, in not more communities builders were planning to build just about as many homes this year as last. With Regulation X, it could take more effort to sell them, but for many a homebuilder, that only meant that business had slipped from "terrific" to "good." In Baltimore, Ex-NAHB President Joseph H. Meyerhoff declared: "Homebuilding is . . . getting on an even keel. There is a lot of hesitancy on the part of builders to undertake big scale projects. They are not as sanguine about starting big numbers of houses as in 1950. Instead, they are proceeding with a few blocks of houses at one time, finishing and selling them—provided they can get financing—before putting others under way. It's a healthy condition."

Latent strength. Meyerhoff started in 1950 homes last year, hoped to start 1,100 this year. (This pointed up another curious but well known fact of the speculative homebuilding industry: a builder's estimate of the general situation could be gloomy, but his personal plans fairly optimistic.) In Indianapolis, John Bauer of ABC Construction Co. complained: "Demand is as big as ever but the ability to buy (under Regulation X) is very sad." At the same, ABC planned to repeat its 1951 production of 100 homes in the \$10,000 and under bracket.

There were contrary opinions. Said St. Louis Real Estate Economist Roy Wenzel: "The business boom and the real estate boom are getting tired." In city after city, glutted by apartments built under the no-risk features of FHA Sec. 608, vacancies were rising in high-priced units

Ground-rent sales. While many a homebuilder complained that Regulation X was preventing use of building materials that were plentiful, there was evidence that available mortgage money would cover only about as many homes as they could sell under credit restrictions (see p. 46). Observed Mortgage Broker W. A. Clarke of Philadelphia, a top expert in the field: "Good mortgages, ready for immediate delivery are selling (e.g. FHA 203's), but other loans are still having difficulty."

The year-old mortgage pinch led a few homebuilders around Washington, D.C. to revive an old practice—selling homes on a ground-rent basis. By retaining title to the land, a lender can fix rent to yield him a higher rate of interest than under a VA or FHA loan. VA Loan Guaranty Chief T. B. King said he would try to stop the deal, however. His objection: buyers never get out of debt.

Modernization boost. Recognizing signs of what many economists regarded as an impending mild recession (something like 1947 or 1949), the Federal Reserve moved gingerly at month's end to ease the credit brakes: it revoked the Regulation W requirement for a 10% down payment on home modernization loans. FHA adjusted its rules for Title I modernization loans to match. Both agencies retained a 36 month ceiling on repayments, however. This

stiffer housing controls. On the basis of permits issued late in February, BLS expected a further gain in starts for March. If it materializes, home-builders will be well on their way to another million house year.

seemed to imply that if housing sales sag in the next few months, the Fed will relax Regulation X, as NAHB and NAREB have been repeatedly demanding. Suggested the monthly review of the National Association of Credit Men: "You will hardly see your synthetic prosperity liquidated in an election year even though you have to print money or inflate credit to keep it alive."

How much housing? To the \$64 spring question—how much housing will be built in 1952—there was much unanimity.

HOUSE & HOME's sister publication, FORTUNE, whose forecast a year ago (1,125,000 housing units for 1951) proved spectacularly accurate (actual: 1,097,000), surveyed 39 cities and offered a prediction for this year: 1,125,000, a 5% gain from '51. Hedged FORTUNE: "The survey could easily be off 5% either way." *Engineering News-Record's* latest guess was a million units, in line with most other predictions, including one by a BLS construction official who is seldom far wrong.

In any case, the "official" government goal of 800,000—spawned by January's DPA cries of shortage—looked as far down the drain as the shortages themselves.

Wage Board Policy of 15c Hour Raise for Labor Threatens Boost in Home Prices

The Wage Stabilization Board's 1952 wage formula for construction workers, announced last month, foreshadowed new price hikes on houses. In Chicago, Martin C. Huggett, executive vice president of the Metropolitan Home Builders Assn., estimated it would bring a 1.2 to 1.75% increase in construction costs, that a \$20,000 home would be boosted \$300 to \$350.

Welfare policy. The WSB announced two policy changes in its new formula: by

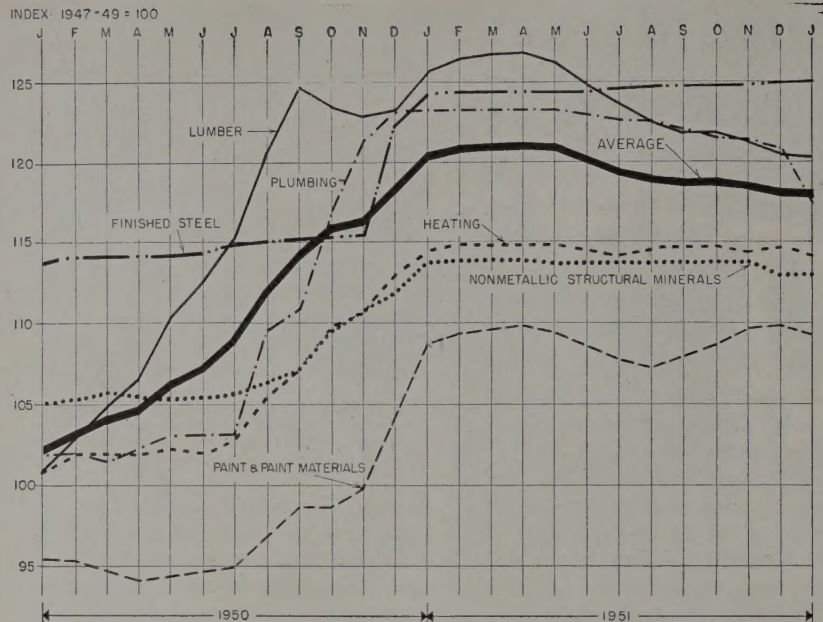
stating it would approve new pay increases up to 15¢ an hour, the board switched from percentage increases "because it disturbs customary differentials"; in deciding (with employer board members dissenting) to approve employer welfare fund contributions up to 7½¢ an hour, the board was now concerning itself with contributions to a plan, rather than benefits yielded.

Higher building costs should be reflected

IN THE NEWS

Among the next 23 pages are reports on these important developments:

- New BLS building materials index . . . p. 34
- Homebuilder warranties soothe Congress . . . p. 35
- Modern design urged for prefabricators . . . p. 37
- House cuts public housing to 5,000 starts . . . p. 39
- Defense housing program picks up . . . p. 43
- Contracts let for demountable houses . . . p. 45
- Mortgage market stays in the doldrums . . . p. 46



NEW BLS INDEX of wholesale building materials prices, revealed at the end of March, shows year-long plateau of most items. Price developments of the month: softwood plywood, after its 6% general price boost in February, held firm. U. S. Plywood guaranteed present prices for 6 months. OPS clamped dollars and cents ceiling prices on fir and hemlock.

shortly because an estimated 70% of construction labor contracts are negotiated in the spring, particularly in May. Although permissive and not mandatory, the increase would bring the average straight-time scale in the construction industry to \$2.61 an hour. Other industries have been granted 4.7% second-round cost-of-living increases (a 10% one was granted in mid-1951). This formula would have given construction workers only a 12¢ boost. WSB justified the extra 3¢ by declaring holiday and vacation increases would be chargeable against it. The Construction Industry Stabilization Commission (at which the NAHB is miffed for not being included) must now approve all increases in employer contributions to welfare plans. Both sides can select the type of benefits, however, including total medical insurance.

Both sides unhappy. The new wage formula pleased neither labor nor industry. To labor, the new formula will mean scaling down over-15¢ increases some of the locals had tentatively gained (which helps explain why the AFL's Richard Gray has lately been declaiming against collective bargaining with the government). Snapped Stephen M. Bailey, business manager of AFL Plumbers Local 130 in Chicago (which had negotiated a 25¢ an hour raise): "Fifteen cents isn't satisfactory and our members won't accept it." To industry, CISC's area-wide wage ceilings are taking away an employer's option to attract key workers with bonuses. NAHB President Alan Brockbank promised a court fight, if necessary, on that issue.

Labor piracy suits. Already, WSB had accused Burns Construction Co., one of Denver's largest homebuilders, of labor piracy by that very method. WSB contended Burns paid 37 bricklayers \$4 hourly, \$1 over the WSB rate, and 19 hod carriers up to \$2.50, 65¢ over the WSB rate. A hearing was set for late this month. The Young-Loftus Construction Co. and E. J. Strecker, of Los Angeles, were found guilty of overpaying carpenters on a La Mesa, Calif. housing project by \$1,340 and ¾ of this was disallowed as a cost factor in income-tax computation. WSB's Cleveland office was mulling over the cases of some 150 employers in Cleveland, Dayton and Paducah involved in overpaying bricklayers and roofers. Signs pointed to a major battle between WSB and U. S. homebuilders.

HOUSING INQUIRY urged on Truman by Housing Conference

Late in February, a delegation from the National Housing Conference called on President Truman, urged him to appoint a special housing inquiry commission. Charged NHC: lack of housing in critical areas seriously impedes the defense effort; U. S. housing generally fails to meet the needs of the aged, low-income, minority and migratory groups, large families; is substandard six times as often for non-whites as for whites; is being built in unintegrated neighborhoods. A month later, there was no sign from the White House that the commission would be formed.

NEW INDEX of building materials prices unveiled by BLS

Two years in the making, a new index of wholesale building materials prices was unveiled last month by the Bureau of Labor Statistics. A far more accurate tool than the 20-year-old series just discarded, the new index has a postwar base selected by the Bureau of the Budget (average 1947-1949 equals 100, in place of 1926). 45 more components and far fewer non-building elements than its predecessor. Instead of feeding all lumber and wood product prices into the over-all index, for instance, the new series selects only lumber actually used in construction, eliminates wood appearing as furniture and crating. Moreover, the relative importance of each element has been shifted to mirror the vast technological changes of the last two decades. Light metals, for example, win a far more important weight than they merited in the mid-twenties.

The new index is a product of study and cooperation on the part of government and industry. Frequently consulted were building industry members of BLS business research advisory group: Miles Colean, Washington economist; H. C. Foreman, AGC managing director; H. C. (Cotton) Northup, executive vice president of the National Retail Lumber Dealers Assn; and Wilson Wright, former economist for Armstrong Cork Co.

HHFA, BLS FUNDS sliced in half by House economy bloc

The House of Representatives took a wild swing with its economy meat cleaver at the bill appropriating funds for the HHFA and others in the government's family of housing bureaus. Arguing that HHFA is not doing an effective coordinating job, lacks the power to make FHA and other constituent agencies fall in line, a Republican-Southern Democrat coalition whacked the Administrative budget for Ray Foley's HHFA from a requested \$6,250,000 nearly in half to \$3,606,000. FHA's field operations fund was pared from \$28,870,000 to \$25,175,000.

As it did last year, the House Appropriations Committee sliced the Bureau of Labor Statistics construction division funds from a requested \$636,000 to \$324,000. Last year, this cut forced BLS to abandon its reports on characteristics of metropolitan area housing, reduced the number of cities where it reported housing starts and building materials prices. If the same reduction stands this year, BLS will have to retrench still further, probably have to abandon regional housing volume reports entirely. Government salaries have gone up 10% in the meantime.

In San Diego, federal marshals arrested nine housing figures (including a VA official), charged them with a multimillion dollar conspiracy to defraud the government.

►FHA blacklisted an Indiana mortgage firm, general contractor, and firm of architects.

►Across the nation, VA hastily tightened up on inspections, regulations and appraisals, raising costs for the blameless 98% (or more) of homebuilders in order to balk the other 2%. In New Jersey, VA experimentally began demanding a "service guarantee" by homebuilders. For details, see below:

RAINS COMMITTEE hears home owners' gripes in four states

"And I will recompense them according to their deeds." Jeremiah 25:14.

Self-policing by builders (see next page) brought praise last month from the five-man House-banking subcommittee that has been investigating complaints of shoddy VA and FHA housing since January. Said Committee Chairman Albert Rains (D, Ala.): "I have not seen any bad building by good builders. The NAHB effort to work out its own builders warranty provision is to be highly complimented." Rains added that the good work by the majority of builders may change the committee's mind about recommending legislation requiring construction warranties.

Tales of woe. At hearings in New Jersey, New York, Michigan and Florida the Rains committee heard tales of GI homes which left something to be desired:

A vet homeowner in Babylon, L. I., testified his cellar floor was less than ½" thick—"it crumbles when you walk on it."

A Lyndhurst, N. J., home had a cellar but, said American Legion representative C. Conrad Schneider, "the builder had forgotten to cut a place for stairway."

Prentice Kluseman, of Fairlawn, N. J., said the only time he saw VA inspectors was "the day after the builder sent over workers to mop up our flooded cellars."

Three GI wives in Jacksonville said the septic tanks in their Nicholas Court and Lakeshore Terrace homes were so frightful sewage backed up all over the bathroom and the surrounding area smells terribly." David B. Lee, director of the state board of health's bureau of sanitary engineers, said Florida's high water table and soil conditions made septic tanks unacceptable throughout the state.

►In Miami, builder Ben Cooper testified the reason for a sudden upsurge in the VA mortgage market was lenders were forcing builders into a 50-50 split on profits. Commented Chairman Rains: "This probably isn't illegal but it sure stinks. It's a situation that can squeeze the veteran."

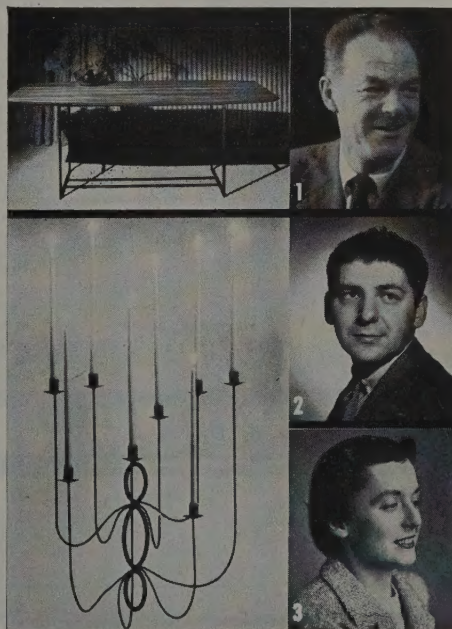
►One general complaint wherever the Rains Committee found trouble: basement leakage.

Blame assessed. Less than halfway through a schedule that will take it to Oklahoma City, Corpus Christi, San Diego, Houston and Chicago, the committee had found little fault with FHA homes, most of it with those of the VA (and even then, Rains estimated complaints involved only about 2% of the 12 million postwar VA

HOUSING officialdom crack down on appraising, septic tank failures

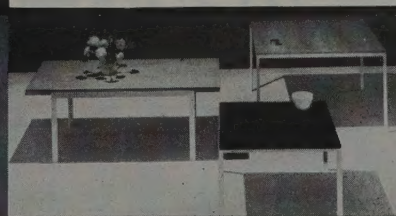
Housing officialdom reacted like a man with a hot foot. With Congress and U. S. Attorneys on the trail, VA and FHA suddenly began discarding long-standing people and practices. VA insisted its system of hiring private fee appraisers was perfectly satisfactory, scoffed at reports it would like to set up a staff of appraisers and inspectors paralleling FHA's. But VA was pushing a cleanup, already had fired many a fee appraiser, especially around Detroit. Other rumbles:

►In San Diego, a disgruntled contractor sounded off in a bar one night a year ago about a scheme apparently known throughout the local building industry. A retired Marine colonel overheard, persuaded the contractor to tell it to the FBI. Upshot: nine arrests, including one VA loan officer, and prosecutors warned there may be more. The principal charge: conspiracy to defraud the government (and veterans) by juggling appraisals, speeding up favored loan applications. The arrested: Francis G. Page, assistant VA loan officer (accused of taking \$15,000 in bribes); Dana McEwen, former chief VA appraiser now a private real estate dealer; John N. Haskell, Jr.,

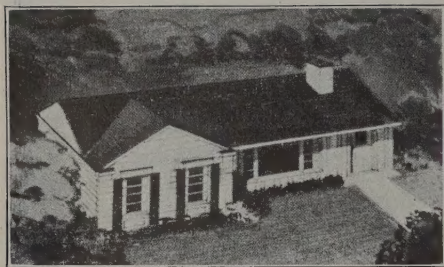


CONTEST WINNERS for home furnishing products at the American Institute of Decorators' conference in New York last month were: 1) Peter Rooke-Ley, of Everett Brown Associates, San Francisco, for his dining room table; 2) Harry Lawenda, of Kneeder-Fauchero, San Francisco, for his eight-branch wall sconce; 3) Florence Knoll, of Knoll Associates, New York, for her elm veneer tables with laminated plastic tops and structural steel "T" bases. Other first awards (not pictured) went to: Ben Rose, Chicago, for his washable hand-screened wallpaper; Estelle & Erwine Laverne, New York, for their linen floor covering; Lucienne Day, London, for her screen-printed linen; and Maxwell Hawker, Los Angeles, for his cotton, rayon and jute casement fabric.

Photos: Everett Brown Associates, Inc., Imogen Cunningham, Dean Stone & Hugo Steccati, Knoll Associates, Inc.

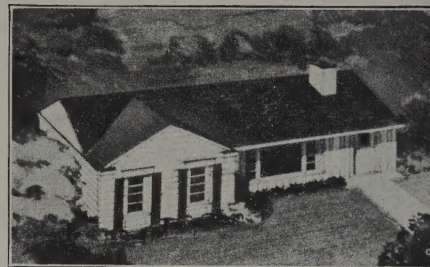


whose LOW-COST HOUSES WILL THEY BUY ?



... THIS IS A LOW COST HOUSE

... And it looks like many other houses to the new home buyer. That is why it is so important for the architect or builder to "dress up" low cost houses with inexpensive features to make them **MORE ATTRACTIVE ... MORE COMFORTABLE ... and MORE SALEABLE.**



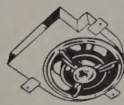
... AND THIS IS A LOW COST HOUSE

... But with NuTone's \$84.95* package it has much more sales appeal! Women especially appreciate the three NuTone Products which give her ... a kitchen free from greasy cooking fumes ... a friendly, musical greeting at her front door ... and "a toasty-warm bathroom."



NUTONE'S \$84.95* or less (at list) PACKAGE

... Includes a Model 800 NuTone Ventilating Fan at \$27.75 list, or a Model 830 NuTone Ventilating Fan at \$26.50 list; a NuTone Model K-16 Door Chime at \$7.25 list; and a NuTone Heat-A-Lite, Model 900, at \$49.95 list ... **ALL INDIVIDUALLY PACKAGED.**



NuTone Ventilating Fan
Models 830 800



NuTone
K-16 Door Chime



NuTone
Model 900 Heat-A-Lite

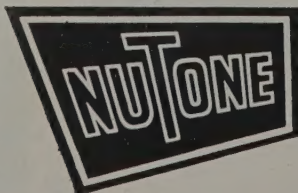
Let the NuTone Package help you **SELL YOUR LOW COST HOUSES FASTER!**

For only \$84.95* or less (at list prices) ... NuTone offers you today's **BIGGEST BUILDING BARGAIN ... ALL THREE NUTONE PRODUCTS** ... a NuTone Ventilating Fan to eliminate kitchen grease and cooking fumes ... a NuTone Door Chime for a friendly musical greeting at the front door ... and a NuTone Heat-A-Lite, the revolutionary new Electric Ceiling Heater to make the bathroom "toasty warm."

If you are planning one house ... or a thousand ... you can include the NuTone \$84.95* package without any strain on your budget. Write today for full details.

NUTONE INC., Dept. HH4, Cincinnati 27, Ohio

THEY'LL BUY YOUR HOUSES



Turn the low cost housing market into **YOUR MARKET** ... with the NuTone \$84.95* package. Write today for complete details about this plan, including free literature, diagrams, specifications and data for installing NuTone Ventilating Fans, Door Chimes and Electric Ceiling Heaters.

Name

Firm Position Held

Address

City Zone State



A small living room can look twice its size



HIGH costs are shrinking a lot of house plans these days. Here's a way to cut down floor area without making an interior look skimpy.

What appears to be a large living room in the picture above is really part dining alcove. Anyone seeing the room for the first time is impressed by its spaciousness without suspecting its double use.

The illusion is partly the result of furnishing the alcove to blend with the living room, but equally important in creating a spacious effect is the use of one smooth sweep of Armstrong's Linoleum in both areas. The floor ties the whole decorating scheme together. The effect is furthered by the brick wall that serves as both outside wall and inside partition.

Besides contributing to the spacious appearance of a room like this, Arm-

strong's Linoleum makes a strong appeal to the home buyer for other important reasons. Women know how easy it is to clean, what long wear it gives, and how comfortable it is underfoot. Armstrong's Linoleum creates a luxurious, decorative wall-to-wall effect—yet the cost is moderate. Its decorative advantages alone can play a big part in selling a home. Whether you are building one house or a multiple unit development, you can profit by adding the extra appeal of Armstrong's Linoleum.

MORE INFORMATION on Armstrong's Linoleum and other Armstrong Floors for residential, business, and industrial uses can be found in Sweets Architectural File, section 13j, catalog Ar.

SEND FOR FREE ROOM PLAN. A plan of the room shown on this page with furniture layout, color scheme description, and a list of furnishings will be sent without charge. Write Armstrong Cork Company, 2604 State Street, Lancaster, Penna.

ARMSTRONG'S LINOLEUM

mitted to 23,000 by the appropriations committee and then slashed to a bare 5,000 on the floor. Moreover, the House voted: to limit the program to 5,000 for every following year unless specifically changed by Congress, to rescind the power of PHA to make contracts which could lead to construction of more than 5,000 units a year.

Same song, second verse. Trying to scare big city congressmen into switching their preliminary stand, the Administration leadership forced a roll call vote only to lose, 192 to 168. Philosophically, public housers recalled they weathered the same storm last year when the House also slashed their program to 5,000 units, but were forced by the Senate to settle for 50,000. To make history repeat itself (as it well may), they redoubled their efforts in the Senate. Other eruptions:

► Barely had Federal Reserve Chairman Robert McChesney Martin finished branding tax-exempt public housing bonds as an "inflationary danger" when the Public Housing Administration announced it will call bids April 15 on the fourth batch of them offered since last summer. Involved this time: \$167 million worth of bonds in 73 communities—mostly small towns in the South and Texas. Whether the new issue would attract interest rate bids as low as the third (1.959%) seemed doubtful: dealers had to cut prices to unload the last 9 million worth of the January issue before the April sale.

► April 15 would be a date to note in Indianapolis, Ind., too. It is the day the Indianapolis Housing Authority announced it will close its offices as a result of a 6 to 3 vote by the city council killing seven proposed public housing projects totaling 1,500 units. The council's vote brought Mayor Alex M. Clark a sharp letter from Acting PHA Commissioner Warren Jay Vinton warning unless the council reverses itself by May 13, PHA will sue the city for \$275,000 already advanced on the seven projects. Bristled the Indianapolis *Star*: "The main issue . . . is whether the PHA should be permitted to force upon the citizens of this community a program they do not want . . ."

A good head of steam. Since the Housing Act of 1949 authorized construction of 135,000 federally aided public housing units per year for six years, public housing had grown into a lusty child. Despite an extraordinarily cumbersome administrative apparatus (requiring protracted negotiations among numerous local

the 155,000 a year level.

In growing, public housing lately had given more and more signs of edging into higher and higher income brackets.

► Item: Vacancies were appearing because (with inflation) too few families had incomes low enough to qualify for admission. In Bridgeport, Conn., the housing authority had 140 empty apartments (out of 2,759) and was confronted by prospect of 280 more June 1 with completion of another project. Responding to persistent appeals from Bridgeport Housing Director Harold Poole, PHA permitted a jump of up to \$800 in income limits (from \$2,500 to \$3,375) for prospective tenants, giving Bridgeport the nation's second highest income admission level.

► Item: The Hartford Housing Authority toted up its figures, found it cost \$75.83 monthly to maintain each "low-rent" tenant-family. Of this, the average tenant pays \$40 rent, the taxpayer pays a subsidy of \$35.83. Since census figures for 1950 put the median rent in Hartford at only \$38, it was clear that in Hartford well over half the citizens were paying taxes which support public housing tenants in more expensive quarters than they had themselves.

► Item: For state-aided public housing, also plagued with vacancies, Connecticut decided to raise rents of over-income tenants by 2% of the excess. Thus a family with an income limit of \$4,900 but an actual income of \$5,900 would tack an extra \$20 on its monthly rent (which ranges from \$45 to \$62 depending on apartment size). The 2% penalty stops when the rent reaches the level of "comparable" privately-run units (\$100 to \$125).

Upper photo, Morgan Fitz; lower, Breckenfeld



COMPARATIVE COST of public and private housing got as good a test as is likely when Knox Corp. erected these similar projects at the same time in Waynesboro, Ga. Public housing (above) cost \$8,076 per 784 sq. ft. unit, with potbellied stoves and no paving. Private rental project (below) cost \$6,258 per 713 sq. ft. unit, with paved streets and fireplaces. Knox blames restrictive PHA rules for difference.



MIAMI BEACH public housing project, a stone's throw from belt of swank resort hotels, drew scornful comment from President Joseph W. Lund of NAREB: "as sensible as building a few prefabs in the Statler Hotel lobby in Washington." The 40-unit, \$442,650 project, opened Mar. 1, was quickly filled with hotel clerks, taxi drivers, a few city employees. Income ceiling for admission: \$2,400 for couples.

► Item: The Houston (Tex.) Housing Authority bought furniture for 20 apartments at "practically cost" from a wholesale dealer, began renting it to tenants for \$10 a month in one-bedroom units, \$12 in two, \$14 in three and \$16 in four. The gimmick: a tenant who rents the furniture three years can keep it. On a one room unit, the authority will thus get \$360 back for a bed-divan, armchair, occasional chair, breakfast set, bed and mattresses, double dresser and chest of drawers that cost only \$340. Protested President Weston Meeks of the Retail Furniture Dealers Association: "Those people shouldn't use taxpayers money to get in the retail furniture business." Besides, he said, the deal probably violates Regulation W.

► Item: The Henderson, Ky. municipal housing commission asked PHA to raise income limits, lamented it couldn't find 68 families with incomes of only \$1,150 to fill them.

► Item: In San Jose, Calif., the municipal vet-



Build NATIONALS . . .

and offer homes to meet every family income!

You can satisfy any prospect with National's two great lines of houses: the De Luxe styles ranging up to 56 feet, some with two baths, fireplaces, basements, breezeways, garages . . . and the "Super-Thrift" models in 2-, 3- and 4-bedroom plans at minimum prices. All National homes are the newest in smartness, comfort, quality materials. Build Nationals and you build SUCCESS!

Some territories still open — sound financial resources required. Inquire today on your business letterhead.



National Homes prefabricated panels and structural parts are commended by Parents' Magazine as advertised therein.



ans' housing project had 17 one-bedroom units cant.

All this meant public housing, despite persistent broadsides by NAREB and NAHB, was becoming better and better entrenched in the hustings. The pro-public housing National Housing Conference, faced for a rash of bills in State legislatures requiring a local vote before projects can be started, could count only seven states where legislative efforts were being made to curb housing authorities. "A pretty sad record," gloated NHC to its members.

DEFENSE PRODUCTION ACT due for a one year extension

Despite waning enthusiasm in Congress and across the country for controls over rents, prices, materials and labor, the political cards seemed implacably stacked in favor of another year's run for the Defense Production Act. The bald truth was that the Republican-Southern Democratic coalition holding the balance of power on Capitol Hill wanted to side step controversial subjects on the eve of a national election. Their fear: if they pulled out the economic plugs by letting the law lapse when it expires on June 30, they might stir up immediate price hikes that would give Fair Dealers a ready-made issue to exploit.

Rent control foes. At the Senate banking committee's hearing on extension of the act which provides the basic framework for building's straitjacket of controls, NAHB, NAREB, the National Association of Manufacturers and other foes of the controlled economy dutifully plumped for less controls. The tune was familiar. Said Harry Fitzgerald, of Evansville, Ind., representing the Realtors' Washington Committee: "Rent control cannot cure the housing shortage, but it can and will prolong a shortage. Production of housing is the answer." Fitzgerald noted that at Ft. Benning, Ga., and Chanute Air Force Base Illinois local commanders have insisted that rent control *not* be reimposed lest it discourage landlords from building and converting new dwelling units.

NAHB urges end Reg. X. Said President Alan Brockbank of NAHB, arguing for outright repeal of Regulation X: "Controls are preventing low income families from buying homes due to heavy down payments required." Reluctantly, the committee voted to extend the Act, but for one year instead of the two Truman asked. It retained rent control by a 7-6 margin, and put this brake on ORS: a public hearing must be held 30 days before rent controls could be re-imposed on areas where they had been lifted by local action.

Prefabricators Urged to Improve Design To Up Sales; Aim at 8% of U.S. Market

Members of the Prefabricated Home Manufacturers' Institute, meeting in Chicago March 24-25 for their ninth annual convention, were told their traditional goals of quick production and low cost had been displaced by a new one.

Said Chicago Architect Howard T. Fisher: "Our houses have got to be better than ever before. The importance of sound money-making again makes *design* of paramount importance. Prefabricated houses can and will be the best-looking houses on the market because the prefabricator can afford to develop better architectural designs."

Four steps to modern. Fisher sorted prefab architecture into four phases: 1) the initial prefabs which had flat roofs for practical reasons and a consequent "modern, international style" which did not then appeal either to customers or bankers, 2) the days when manufacturers learned how to mass produce sloping roofs, 3) a period of premature return to modern designs which were too limited and too severe, and 4) today's transition period of conventional designs being invaded by contemporary ideas. Said Fisher: "Mortgage bankers are beginning to see the necessity for a style of change themselves."

Seconding him, Cincinnati Prefabricator John Pease found that dealers who previously were not interested in prefabs were now showing great interest in his new, modern houses designed by Architects Robison Heap, Oscar Stonorov and Schwarz & West (Oct. '51 issue, p. 225).

Production stable. For the third year in a row, prefabbers were able to congratulate themselves on capturing an increasing

slice of the U. S. housing market. Reported PHMI Manager Harry H. Steidle: despite the mortgage drought prefabricators sold 50,000 homes in 1951. This was only a 9% drop from 1950, compared to a 22% drop for housing starts in general.

POST-WAR HOUSING PRODUCTION

YEAR	PREFAB	% of All Single-Family Units
1946	37,200	6.3
1947	37,400	5.0
1948	30,000	3.9
1949	35,000	4.4
1950	55,000	4.8
1951	50,000	5.7

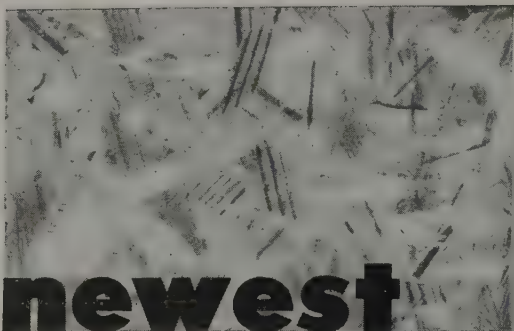
This year, Steidle hoped prefabbers would get 8% of the market—about 80,000 homes. For the long-range market, PHMI heard an encouraging forecast from William E. Bergeron, director of PHA's Chicago office (where, except for Chicago itself, PHA is pioneering the use of prefabs): fire-zone preclusion and high land costs may close three quarters of the six-year, 810,000-unit public housing program to prefabbers, but the prefab industry can still set its sights for 150,000 of these units . . . "if it is interested in getting the business."

Marketing survey. Glenn H. Beyer, director of Cornell University's housing research center, revealed preliminary findings of his HHFA-financed survey of prefab marketing:

- ▶ Prefab manufacturers need to decide plant capacity and possible sales before deciding on their dealer staff.
- ▶ Geographical areas should be delineated—how far out can prefabs be built without raising hob with distribution costs?
- ▶ No manufacturer yet has a staff member doing sales analysis (typical of new industries which know only sellers' markets).
- ▶ Communities should be "conned" for saleability.



OFFICERS WERE RE-ELECTED by the Prefabricated Home Manufacturers' Institute: (seated) Robert E. Ott, secretary-treasurer; John C. Taylor Jr., president; William B. F. Hall, vice-president. Also pictured: (standing) directors John W. Pease, Hart Anderson, Walter H. Ahrens, John O'Brien, and manager Harry H. Steidle.

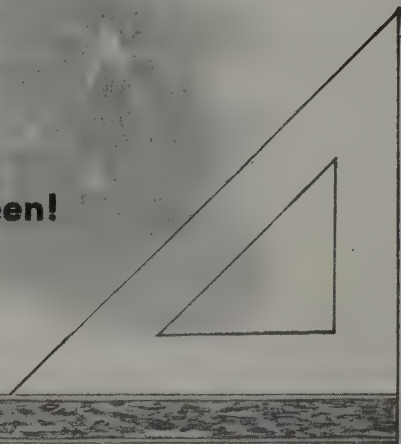


It's the **newest**

laminated wood paneling
...unlike anything you've ever seen!

It's the **flattest**

paneling yet developed
—virtually warp-free



It's **novoply***

—revolutionary, new all-wood material. Light. Strong. Spectacularly beautiful. Easily fabricated. Has excellent insulating and sound reduction qualities. Remarkably low priced.

Novoply has qualities superior to those of any wood product yet developed!

It challenges the imagination...offers unlimited possibilities for spirited, distinctive wall and ceiling paneling, for furniture and fixtures. It is the ideal material for cabinet and sliding doors—won't warp or jam. Just the thing for built-ins. In fact, you'll find scores of uses for this exciting new material.

Seeing is believing—write today for free sample of NOVOPLY and descriptive folder.

*Trade-mark registered.
Patented; other patents pending.



Made by **UNITED STATES PLYWOOD CORPORATION**

Manufacturers and Distributors of
Weldwood Plywood, Weldwood Doors
and Other Specialties.

.....
 . UNITED STATES PLYWOOD CORPORATION, 55 West 44th Street, New York 18, N. Y.
 . Please send a sample of NOVOPLY and descriptive booklet.
 . Name.....
 . Address.....
 . City.....Zone.....State.....
 .

MOB-4-52



A prefabricator's competitive position is better than the average builder on individual, scattered lots, better in towns where labor supply is tight.

Of 1950 sales, 55% were handled by dealer-contractors, 24% by dealer-operative builders who put the houses up speculatively, 21% by real estate dealers.

Among 1950 customers, 64% were families with children under eight, 16% were families with children between eight and 18, 13% were childless couples, 6% were families with wives over 35 and children over 18.

Armed Forces Housing Agency Chief Tom Coogan urged prefabricators to step up their research—"We're long past due for new wall material, floor material, new ways of lighting." Up to now, noted Coogan, prefabricators have been content with "the same old 2" x 4" studs, sheathing, paper, plaster and outside shingles."

HOUSING ORDER cuts self-certifiable copper for homes

Before a New Jersey meeting of homebuilders, Sidney Pritchard, assistant to the manager of NPA's Newark office, sounded what might be a gentle warning of stern action to come. Too many builders throughout the U. S., he asserted, were cheating on CMP self-certification by using more than prescribed poundage limits of copper tubing, and by using aluminum ducts. NPA had been trying to turn the other cheek, said Pritchard, but if the practice persisted, law suits could follow.

With warehouses bulging with untouchable controlled materials, Pritchard's warning struck a peculiarly discordant note. NAHB's latest survey showed that even copper had joined steel in becoming more available. (In Kansas City, President Miller Nichols of J. C. Nichols Co. growled that he refused 100,000 ft. of copper tubing offered him last month because of CMP.)

The new M-100 housing order, which was finally issued on March 6, reduced the copper a builder can self certify per house with copper water pipes from 160 to 135 lbs. While the ceiling on carbon steel was raised 500 lbs. to 1,950 lbs. this was largely offset by shifting galvanized sheet metal duct work and reinforcing mesh from "B" products (not counted in self-certification) to "A" products (which are counted). Moreover, the new regulation banned use of materials in inventory above the amounts specified in NPA's "Schedule" (H&H, March '52, p. 49)*. Commented NAHB: "It is difficult to understand why the home building industry is the only one in which the larger units of its product are discriminated against."

Allotment table in March H&H, based on preliminary NPA plans, was revised upward by addition of 500 lbs. of carbon steel. Two, three and four unit structures now take merely two, three or four times self-certifiable amounts of steel for one-unit structures.



143 CRITICAL HOUSING AREAS LIE IN 42 STATES, CALL FOR 7.2% OF 1952'S PROBABLE STARTS

Defense Housing Starts Reach 10,000; Congress Dallies Over Mortgage Aid

Only four months after the need became clear, Congress got down to cases in proping up the market for defense housing mortgages. It was, of course, too late to prevent a probable slump in defense housing construction once the backlog of pre-Dec. 31 Fanny May advance commitments is worked off. Moreover, the legislators' first move to give mortgage aid fell far short of what was needed to keep the defense housing program alive permanently.

The stopgap bill proposed to rescue only the 5,635 applications to Fanny May for \$45 million worth of defense housing which the agency had to reject because its \$200 million advance commitment fund ran dry even before the Dec. 31 cutoff date. The bill *did* have bi-partisan support and a "no amendment" agreement that indicated quick passage.

More money later. For the long run, said Chairman John J. Sparkman (D. Ala.) of the Senate housing subcommittee, loomed only two alternatives: raise FHA and VA interest rates, or give Fanny May a sizable chunk of precommitment authority. Neither Sparkman nor Chairman Burnet Maybank of the Senate Banking Committee (the upper chamber's two leaders on housing policy) leaned toward raising the interest rate. So eventually, probably after Congress disposes of the Defense Production Act extension, the Senate and House banking committees will begin thinking seriously of giving Fanny May enough precommitment authority to get the bulk of the defense housing program built.

Return to Title VI? Forthright Tom Coogan, director of the Armed Forces Housing Agency, proposed another way out of the defense housing financial dilemma. In a statement filed with the Senate Banking Committee, he urged a return to World War II's Title VI. His argument: a Title VI vehicle would impose no requirement of long range marketability on FHA, thus making it easier to provide housing for bases the Pentagon cannot certify as permanent.

Year's progress. It was now more than a year since the first critical defense areas (Savannah River and Paducah, Ky.) were designated. So far, only 10,103 units out of 71,940 programmed in 143 areas were begun. But lately, the defense housing program for the first time was beginning to show real signs of life. For instance:

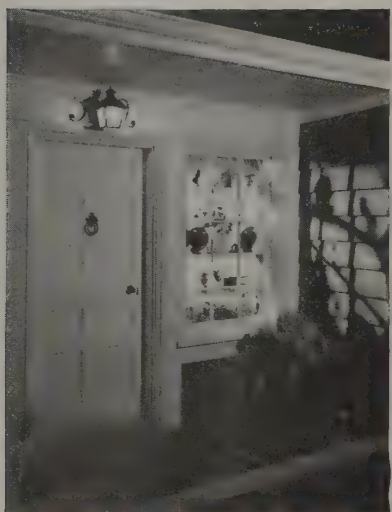
► In the Fort Sill-Lawton, Oklahoma, area, foresighted builders anticipated the defense housing designation, were ready in record time with plans. Result: 726 starts so far out of a programmed 1,000, and completion of the program in sight for October 1.

► At Camp Le Jeune, N. C., 693 units out of a programmed 1,200 were under way although mortgage money was, according to FHA State Director James P. McCrae, "tight to non-existent."

How much defense housing? In his budget message, President Truman forecast the nation would need 400,000 defense housing units in the next 18 months. But the subsequent decision to stretch out rearmament was leading high ranking defense housing policy makers to suggest that the program would not come near that.



Here is the doorway opposite but with a panel of regular single glaze glass. With a random clear glass block panel, prying eyes cannot see inside.



By night, the entranceway glows with a light that radiates welcome to friends. By day, inside rooms are flooded with natural daylight.

This random clear panel retains all of the doorway's colonial charm. The subtle variation in the block face is reminiscent of old handmade glass.



GLASS BLOCK "GOES" WITH ANY ARCHITECTURE

WHETHER A HOME is traditional or modern, it can have the advantages of Insulux Glass Block®. Block patterns are available in a wide variety of face designs that "go" with any architectural design.

What other material offers you the opportunities to create such interesting, new architectural effects that are so decorative . . . so useful . . . yet so practical?

For information, write to Insulux Division, American Structural Products Company, Box 1035, Toledo 1, Ohio.

INSULUX GLASS BLOCK

A product of the Owens-Illinois Glass Company



HHFA Picks Seven Designs for Test of Demountable, Permanent Defense Housing

around many a booming military base, where *thousands* of soldier-families keep the tar paper shacks and converted chicken coops filled, defense housing planners have been unable to schedule more than a few *hundred* Title IX defense homes. Reason: the Defense Housing Act requires HHFA to certify that all the housing it programs under Title IX is needed *permanently*; yet around isolated communities where the influx of fighting men in training is the only cause of a housing shortage, who can honestly say whether homes for soldier-families are needed for five, ten, 25 or 40 years?

Missing link. To bridge this gap between permanent defense housing and trailers (ideal for brief floods of population like construction camps), HHFA since January has been trying to develop a *permanent* house that can be moved from town to town as defense needs shift, yet is as well-built and pleasant to occupy as any standard, fixed-to-site home.

Last month came the first big milestone of progress. From offerings by 36 companies, HHFA picked seven designs (*pictured on this and the next page*) for a trial run. Bustling Ralph Kaul, special HHFA adviser in charge of the demountable project, had set his sights on houses which:

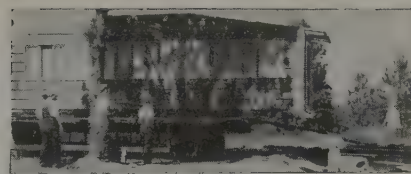
Required no more than 200 man-hours of labor to erect on the site,

Could be knocked down, moved and re-assembled with the loss of only 5% of the materials,

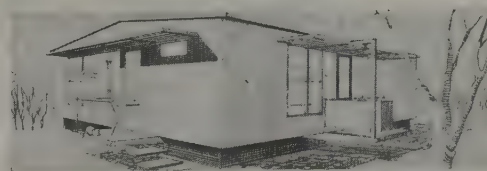
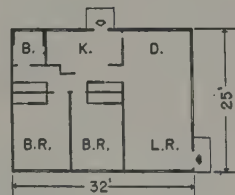
Could be built to meet FHA specifications in units of 100 or more for no more than \$9,000 for a two-bedroom house of 765 to 950 sq. ft. and no more than \$10,000 for a three-bedroom house of 985 to 1,200 sq. ft.

For the trial run, each of the seven chosen firms will build their demountable house, then take it down, move it 100 miles and set it up again while HHFA inspectors watch. Said Kaul: "The cost estimates are very encouraging. I hope they are borne out by the relocation tests in April and May."

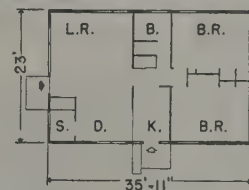
Cost: a secret. How much the test program will cost HHFA did not say. A good guess was between \$10,000 and \$15,000 per house. The money comes out of the Public Housing Administration's kitty for government construction of defense housing. One disappointment: Knox Corp. was the only prefabricator offering a house whose design met the HHFA's standards.



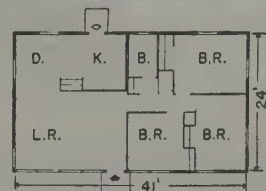
TWO FIRMS, Knox Corp. of Thomson, Ga., and Gresham Construction Co. of Santa Clara, Calif., offered the Bergstrom expanding house (H&H, Jan. '52). It is trucked to the site in a compact, oblong package (8' x 32') which Designer Carl Bergstrom says needs no special highway permit, is within legal highway shipment limits in all states. On site, gable end sections pull out from 8' to 25', producing a two-bedroom, 800 sq. ft. house. Cost: \$7,000 in quantity. Redeployment cost estimate: \$2.25 per sq. ft., 355 man-hours.



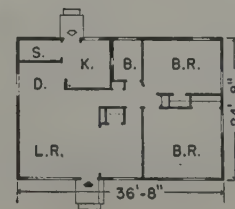
ACORN HOUSES, Inc., East Acton, Mass., will build a hinged, folding 2-bedroom (800 sq. ft.) house which can be moved as an 8' x 24' package. Panels are plastic-impregnated layers of corrugated paper covered with stressed-skin plywood. Estimated cost in quantity: \$8,500 plus land. Redeployment cost estimate: \$1.12 per sq. ft., 200 man-hours.



SOUTH BEND FABRICATING CO., Seattle, offered a three-bedroom, 984 sq. ft. house. Stressed-skin modular wall, ceiling and roof panels are hinged to collapsible roof trusses, nest into a compact shipping package. Erection calls for a mechanical lift. Cost estimate: \$8,400. Redeployment estimate: \$1.18 per sq. ft., under 300 man-hours.

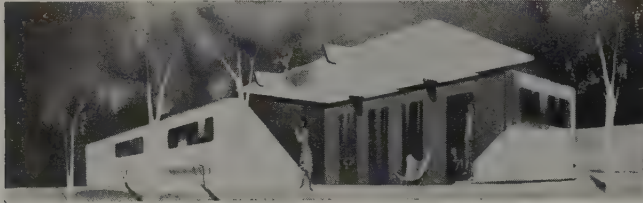
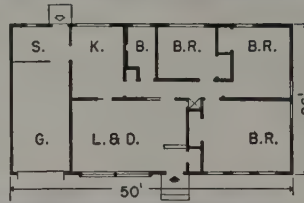


NICOLL LUMBER CO., Redwood City, Calif., offered a two-bedroom, 858 sq. ft. house featuring an 8' x 24' mechanical core surrounded by prefabricated panels. Cost: about \$7,000. Redeployment cost estimate: \$1.58 per sq. ft. including new foundations, 334 man-hours.

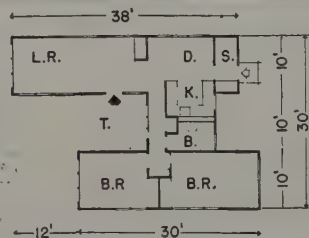




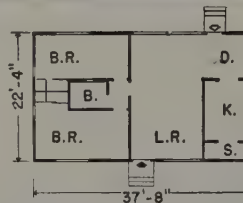
MOBILHOME CORP., Bakersfield, Calif., moves its 3-bedroom, 1,045 sq. ft. house as a complete unit, a stunt that requires bomber dollies and special highway permits. Cost: \$8,250. Redeployment estimate: \$1.12 per sq. ft., 300 man-hours for 100 mile move. Mobilhomes has 18 licensee plants in eight states, mostly in the West.



PRESSED STEEL CAR CO., Chicago, Ill., a railroad car maker invading the housing field for the first time, will prefabricate two stressed-skin plywood units, each 40' x 9½', which can be joined several ways at the site to form a two-bedroom house. Estimated quantity cost: under \$8,000. Redeployment cost estimate: \$1.21 per sq. ft., under 200 man-hours.



TRANSA-HOUSING, INC., Long Beach, Calif., designed a larger version of its portable, folding Transa-House for HHFA's project. Stressed-skin plywood panels hinged to a central mechanical core fold out at the site to form an 800 sq. ft., two bedroom house. Cost: under \$8,000. Redeployment cost estimate: \$1.23 per sq. ft., under 200 man-hours (because folded house size is 8'4" x 37'8", permitting cheap highway transport).



MORTGAGE MARKET eases a little; lenders still seek bargains

It was just a year since the Federal Reserve unpegged government bonds, sent the insured-guaranteed segment of the mortgage market into a tailspin. So far, the recovery that some experts had foreseen as long ago as last fall had not materialized.

Last month produced a surge of activity in FHA and VA mortgage sales* in the all-

important secondary market, but close inspection showed it was mostly window shopping. Explained Vice President John J. Scully of New York's Chase National Bank: "There are signs the FHA-VA market is easing. But banks are still looking for bargains, meaning yields over 3.75%."

Pressure of savings. Most compelling reason for renewed interest in VA mortgages was the phenomenal rise in savings. Between January and February, deposits zoomed \$110 million to a new all-time peak of \$21.1 billion. Moreover, the rate of rise was the steepest in the five years the National Association of Mutual Savings

Banks has gathered the statistics.

Lenders were finding conventional loans scarce. Homebuilders and homebuyers alike were conditioned to the easier down payments and lower interest of government-backed loans. Another pressure tending to push savings bank investors toward mortgages was New York State's new ruling raising the interest ceiling on deposits from 2 to 2½%.

Plateau ahead? But rising savings bank interest rates reflected past earnings, not future expectations. And there were these hints of continued money-scarcity:

► Both New York Life and Prudential Insurance Co., two of the nation's biggest private buyers of government-supported mortgages, pulled in their horns on buying VAs. Said New York Life: "No more for a while." Said a Prudential official: "We're not buying portfolios, but if a veteran walks in and wants a loan, that's different . . ."

► At its current rate of buying (about \$60 million a month), Federal National Mortgage Association will run out of funds for buying nondefense mortgages by the end of April unless Congress comes to the rescue with a new grant of lending authority. If that happens, said President George West of Atlanta's First Federal Savings and Loan Association, "I don't think there will be any more GI loans around here."

► New offerings of corporate bonds in the next few months will equal the impressive volume of the last six months. And bond yields, down in January and February, recovered in March, may surge still higher. American Cyanamid and National Cash Register paid 3.75%, and Southern California Gas Co. (a Grade A) found sales soft even at 3.42%.

The net effect, predicted Vice President George T. Conklin of Guardian Life Insurance Co., is that "the mortgage market will go bumping along at the same pace it has."

NEW TECHNIQUES for roof truss spacing found by researchers

Two new techniques for spacing roof trusses 48" apart instead of the usual 24"—thus reducing the number of trusses needed by 50%—were announced by Southwest Research Institute.

► An incombustible acoustical tile, connected by invisible T-splines, has been developed to eliminate half the roof trusses and facilitate open planning.

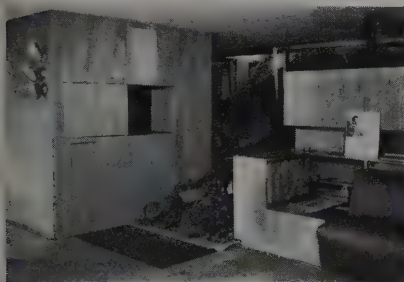
► A galvanized sheet metal H-clip has been found to strengthen the tile ceiling when inserted in the horizontal joints midway between the trusses. The H-clip is ¾" deep and each of its lugs is ¾" square.

The combination of tile and H-clip eliminates "weaving." Up to now, if trusses were further than 24" apart the weight of workmen on the roof would depress sheathing as much as 7/16" and rupture roofing materials. The two new developments limit this depression to 5/16". Moreover, the new ceiling eliminates noise, reduces construction cost and the pattern of the square-tiled ceiling adds to the home's looks.

* FHA loans were bringing 99 to par, nationally and some 203s were commanding 101 in the monied East. VA paper was reported at 95 to 97 nationally, and as high as 98 around Manhattan.

PEOPLE: landslide into house injures Julius Shulman; Chicago AIA to study lifting contracting ban; builder Doelger sued for \$60,000

Architectural photographer **Julius Shulman** found to his regret that his house was his best subject last month. The house, designed by architect **Raphael Soriano** and engineer **William Porush**, lies in the Holly-



INDOOR-OUTDOOR LIVING

wood Hills at the base of a 40' graded basalt rock cut. Came a 2" Los Angeles rain and down poured 800-1,000 tons of rock, pinning Shulman as he tried to back his delivery truck out of the garage, fracturing his right leg, flattening the truck, service porch and rear bedroom. One of the garage's 8" beams was bent like a bobby pin. The house itself is built on an 8' module of 6" steel beams. Engineer Porush expected it to spring back from a slight displacement once the rock mass was removed. Said Porush: "Had the house had a wood frame, the entire structure would have been flattened into kindling." As it is, twisted aluminum window frames, broken windows, ceiling cracks, ruined rubber and cork-tile flooring, plus general damage to frame and furnishings will cost Shulman \$10,000 to repair. Regrading will mean another \$5,000. In addition to his leg, Shulman had another pain to nurse: the insurance doesn't cover natural damage.

After a facts-of-life talk by **Walter Gropius**, knowledgeable chairman of Harvard's School of Architecture, members of the Chicago chapter last month became the first AIA group to study lifting the traditional ban against an architect engaging in building contracting. Said Gropius: "Architects must regain the medieval role of 'master builder' if they are to survive in the industrial age. When the great cathedrals were built the architect headed the construction team as co-ordinator. Now the young architect must learn to: work with the scientist and producer in developing new building materials; incorporate finished materials into his design; work with the contractor on the site." What's more, said Gropius, an architect would no longer be "penalized" with a small fee.

As it is, clients suspect he "rigs" the house price in order to increase his earnings. Were he a definite part of the financial enterprise such suspicion would be removed. Gropius plans to repeat his words before the Philadelphia AIA this month.

San Francisco builder **Henry Doelger** was having legal differences with his former employee, **Emile A. Raffetto**. Doelger started proceedings by seeking to restrain the Prudential Insurance Co. from paying Raffetto a \$50,000 loan commission. In a cross complaint, Raffetto sought \$60,000 damages. He claimed he had helped Doelger obtain a \$4.8 million loan for his Westlake development, for which he had been promised a \$3,000 trip to Hawaii for himself and family and \$3,000 monthly profits in a new corporation. Raffetto said he was still waiting to be paid.

Named: **Joseph H. Orendorff**, as director of the HHFA's housing research division. He has been acting director since last September; **Ray V. Carey**, former city manager of Stockton, Calif., as the Los Angeles Home Builders Institute's executive vice-president, succeeding **Len Haggard**, who will now publicize Mark Taper's Biltmore Homes; **Jean Labatut**, Princeton professor of architecture, as a knight of the French Legion of Honor; **Fred J. Driscoll**, to a second term as president of the Building Trades Employers' Assn. of New York; **J. A. Gilbreath**, of Servel, Inc., and **A. B. Newton**, of Acme Industries, Inc., as chairman and vice chairman of the Air Conditioning and Refrigerating Machinery Assn.'s newly-formed residential air conditioning section; **Angus G. Wynne Jr.**, president of the American Home Realty Co., as Dallas "Realtor of the Year" by the Dallas Realty Board; **Howard R. Olson**, as general manager of the Chicago Regional Planning Assn.

Photos: (top) Julius Shulman; (below) Foto Levi



FIRENZE DEFENDED: citizens resent 'barracks' dwarfing Ponte Vecchio

Florentines took to picketing along the River Arno last month in protest against what they felt was a definite thistle in the "City of Flowers" bouquet—a nine-story apartment house which they dubbed, "Great Big Barracks No. 1." The building was accused of violating Firenze's building code. But far more important to Florentines, its height was dwarfing the nearby Ponte Vecchio, famed and favorite 14th century covered bridge, and its contemporary roof line was about to bring disharmony among the balconies and bay windows of the neighboring skyline. One placard (left) showed a Manhattan skyline branching off from the Ponte Vecchio with the caption, "Do you recognize it? It is Florence." Another (center) declared: "Florence! We were unable to defend you from destruction, but we will save you from reconstruction." The picketers made their point. The apartment house owners agreed to take down the ninth and eighth floors and soften the roofline.

Tasting blood, Aesthetes next went after "Great Big Barracks No. 2," a sprawling lower

building going up next to the apartment, and a court suspended construction on four others pending modification orders. The movement spread throughout Northern Italy, culminating in a demand by the public prosecutor of Turin that ten floors be lopped off a 14-floor building on the Via Santa Teresa. In Florence, at least, the construction consternation was promptly blamed on the city's recent Communist administration which, in its anxiety to promote as many housing units as possible, issued provisional building permits without studying plans.

As Prof. Roberto Papini of the League of Action for the Aesthetic Defense of Florence explained it: "The problem of reconstruction is harmonizing the new with the old. Building interests who want to make maximum use of the downtown ground space threaten to create blocks of buildings which will submerge the old monuments. Florentines do not want modern architecture to renounce its character, but merely ask that it fit in naturally with the buildings around it."



In Philadelphia



In Florida



In Indiana



In New York

Young Moderns beg for Apartments You can Make from Old Tax-Eaters!

DWYER KITCHENS

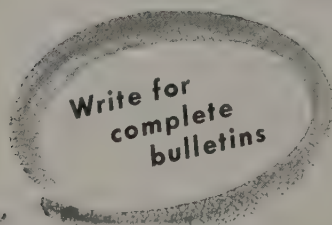
Dwyer Kitchens are specifically designed for small apartments . . . in remodeling or in original construction.

You can remodel an old residence or outmoded apartment building to meet urgent housing needs . . . and do it profitably with Dwyer Kitchens.

1. Space-saving. Complete working kitchens 4 to 6 feet wide.
2. Easy to install with regular help.
3. Economical to maintain. Rarely needed service is simplified because every vital part can be serviced from the front.
4. Genuine vitreous porcelain on fronts and work surfaces; never need repainting. Working housewives admire and enjoy the shiny white porcelain from which grease and dirt wipe off like magic.



DWYER KITCHENS



Products of an organization which has specialized in compact porcelain kitchens for more than a quarter-century.

DWYER PRODUCTS CORPORATION

Dept. B452

Michigan City, Indiana

LEADING DESIGNERS SPECIFY GENUINE CLAY TILE

Clay Tile again proves to be an exciting, modern material as used by Muller-Barringer, one of America's leading firms of designers. Dramatic focal point of this room is a striking clay tile fireplace. The decorator colors of the textured hearth are locked for life in its kiln-fired surface . . . cleaning like a charm . . . never to be refinished. Note, too, the practical use of stainproof clay tile on coffee table and service chest . . . the warm inviting red of the easily-cleaned quarry tile floor. Clay Tile offers your clients rich color and design potential, the twin factors of extremely long life and very low maintenance plus an unmatched resistance to wear, staining, moisture and scratching. It will pay you to study this versatile material. *Tile Council of America, 10 East 40th St., New York, or Room 433, 727 W. Seventh St., Los Angeles, Calif.*

GENUINE CLAY
tile

The Modern Style is

PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co. • B. Mifflin Hood Co. • Cambridge Tile Mfg. Co. • Carlyle Tile Co. • General Tile Corp. • Gladding, McBean & Co. • Mosaic Tile Co. • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pacific Clay Products • Pacific Tile and Porcelain Co. • Pomona Tile Mfg. Co. • Robertson Mfg. Co. • Summitville Tiles, Inc. • United States Quarry Tile Co. • Winburn Tile Mfg. Co.

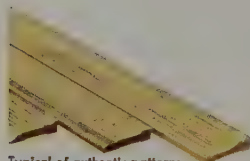


Specify ARKANSAS SOFT PINE Satin-like Interior Trim

Crossett supplies this superior woodwork in A.I.A.—approved contours and standard patterns which, through quantity production, give you the advantage of fine quality at important cost saving over custom millwork. Arkansas Soft Pine's soft texture, light weight and freedom from pitch work easily to close detail, patterns matching exactly at mitres. Seasoned to mandatory moisture content, it doesn't split, shrink or swell. Thus stabilized, the wood absorbs primers evenly, holding paint, stain or enamel finishes uniformly smooth, free from raised grain . . . qualities that safeguard lasting good appearance.

FOR BUILT-INS AND STAIR WORK

Matching the guild-craft refinement of its satin-like trim and mouldings, are Crossett's related Arkansas Soft Pine products for interior built-ins, stair work and the like, all available at your local lumber dealer's, and identified by these trade-marks. For further information, address:



Typical of authentic patterns in satin-like interior trim. Appropriate to a wide variety of decorative schemes.



BUILDING CODES: move to speed use of new materials sought

To makers of building materials, one of the major nuisances of the U. S.'s crazy quilt pattern of 2,200 local and state building codes and regional codes is that laboratory tests for new materials often must be repeated over and over again at great and unnecessary expense. Moreover, even in cities where officials ought to know better, available research data is all too often ignored or inadequate while unscientific tests are accepted by ignorant or stubborn inspectors.

Joint action. At the invitation of Director C. W. Smith of Southwest Research Institute, 25 construction technical experts met in Washington's Mayflower Hotel to try a collective approach to the problem that disjointed action had so complicated. Mindful of the intense rivalry between the nation's major regional building code groups (Pacific Coast Building Officials Conference, Building Officials Conference of America, Southern Building Code Congress, National Board of Fire Underwriters, Midwest Conference of Building Officials), Smith painstakingly pointed out that he contemplated no discussion of building code unification. But discussion veered that way anyway. To everyone's surprise, Executive Director Marion L. Clement of the Southern Building Code Congress, which has been the chief enemy of building code unification so far, found himself proposing that a committee be formed to discuss unification of requirements for items like deflections and live loads. Reminded that SBCC had refused to participate in efforts by the three-year-old Joint Committee on Unification of Building Codes to do just that, Clement lapsed back into character: "We haven't committed ourselves to the JCUBC because we figured we'd stand to lose more than we'll gain. The committee is stacked against us."

Progress made. In the end, the day-long meeting produced encouraging progress toward wider distribution of data on reliable testing laboratories and greater acceptance of their tests throughout the country. The conferees agreed to ask Building Research Advisory Board to form a technical committee to identify competent materials testing laboratories, circularize major code organizations with the results.

Given a better flow of data on testing, code groups should be able to reach decisions faster on new materials and methods, then pass on to their member building officials speedy, authoritative guidance that would hasten adoption of money-saving, waste-cutting innovations.

(NEWS continued on p. 52)

See what Formed Metal plumbing ware



Offers You

These are reasons why many architects and builders are specifying *Formed Metal Plumbing Ware* today:

It combines modern design with a metal that was *created especially* for porcelain enameling. Formed steel bathtubs, lavatories, sinks and laundry trays are smart-looking. In keeping with the modern architectural trends, they are lightweight yet strong.

Formed steel plumbing fixtures are available in a wide range of gay colors and the ever-popular white.



Long-Lasting. The acid-resisting porcelain enameled surface of Formed Steel bathtubs and sinks costs nothing extra. It adds to the life and serviceability of these fixtures because the high gloss finish stays bright and smooth, easy to keep clean.



Safer Too. The design and construction of Formed Steel bathtubs make it possible to provide new safety features. The bottom of the tub is extra wide and needs less slope than older types of fixtures.



Easy to Handle and Install. Formed Steel fixtures weigh only one-third as much as old-fashioned types. Yet they are designed to provide extra strength where strength is needed. Two men can carry a Formed Steel bathtub—an advantage that means savings in handling and installation costs.

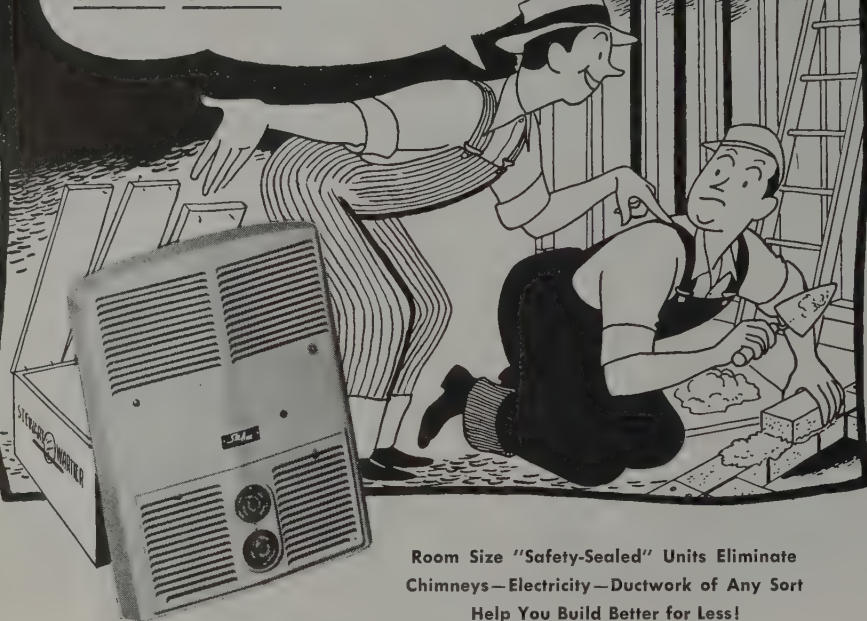
Armco Enameling Iron—the "World's Standard" for fine porcelain enameling—is the most widely used base metal for formed metal plumbing fixtures. Write us for the names of manufacturers of these modern bathtubs, sinks and other accessories.

ARMCO STEEL CORPORATION

2452 CURTIS STREET, MIDDLETOWN, OHIO • PLANTS AND SALES OFFICES FROM
COAST TO COAST • EXPORT: THE ARMCO INTERNATIONAL CORPORATION



Hey Mac ...YOU CAN
FORGET THE CHIMNEY...THE
ARCHITECT SPECIFIED
"SAFETY-SEALED" GAS HEATING!



Room Size "Safety-Sealed" Units Eliminate
Chimneys—Electricity—Ductwork of Any Sort
Help You Build Better for Less!

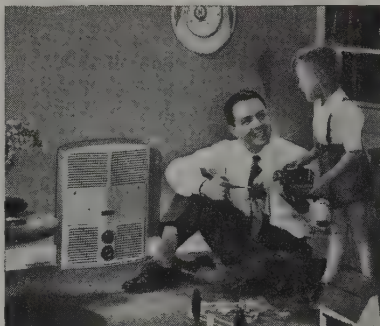
New savings in installation! New savings in floor space! New, positive safety too! Modern, thrifty "Safety-Sealed" units bring you all these advantages now. And, in a clean, fully automatic zone controlled gas heating system.

Revolutionary in design "Safety-Sealed" units burn gas in a sealed combustion chamber—then vent all combustion products outside after use. (Room air is never used for combustion.) Efficient. Economical. They permit quick, easy installation in any exterior wall, with no chimneys, no ductwork or electricity required.

Here you get all the proven benefits of perimeter heating. Room size units that are independently operated and controlled... designed to heat cold walls... stop chilling drafts. Plus a heating system that operates silently, dependably on either natural, manufactured or LP gas. Has no moving parts to maintain or replace.

Consider all these advantages now. The real savings against rising building costs, greatly simplified heating plan, plus the added desirability of a heating system that

completely solves moisture problems of combustion products in tightly insulated small homes. You'll want to specify and recommend "Safety-Sealed" gas heating on every job possible!



Shown Above: Model 991-14; 14,000 BTU/HR. 18" x 24" x 4".

GET THE FACTS: Write now for complete free information and specifications on this latest development in modern gas heating. Clip and mail the coupon today.

STEWART *Safety Sealed* **WARNER**
DOMESTIC HEATING

STEWART-WARNER CORPORATION
South Wind Division • 1514 Drover Street
Indianapolis 7, Indiana



Approved by American Gas Association

Stewart-Warner Corporation, South Wind Division
Dept. K-42, 1514 Drover Street, Indianapolis 7, Ind.
Please send me specifications and complete details on
"Safety-Sealed" Saf-Aire Gas Heating Units:

Name.....

Address.....

City..... Zone..... State.....

FLAT-TOP HOUSE stirs town to legislate against modern design

Garden City, L. I. is one of those nice quiet incorporated village suburbs. It is proud that a New York merchandising magnate named Alexander T. Stewart founded it as his private estate in 1869. It is proud (and careful) of the residents it attracts. And it is proud of what it likes to regard as architectural harmony—a harmony that encompasses the great English half-timber manses, the porticoed colonial and the traditional, \$17,000-plus homes that have been built there in recent years.

That pride was manifested on a recent Thursday night when the residents gathered in the village hall and approved "Local Law No. 1—1952" which sets up a five-member Board of Review to disapprove projected house plans of "excessive similarity and dissimilarity." As Village Clerk Eugene R. Courtney explains it, the architectural equilibrium of Garden City's 15,000 homes began to quiver last year from two trends: builders coming in and putting up houses of similar exteriors; and the erection of a dozen flat-tops. Then the 13th popped up six months ago on Nassau Boulevard, right between two dignified old-style mansions.

"We had a gentlemen's agreement with the builders but that didn't work out. When we tried it in writing there were still loopholes. We found it impossible to codify. So we have set up a Board of Review," Courtney said.

Just how legal Garden City's action is the courts have yet to decide. Rye, in New York's swank Westchester Co., passed such a law six months ago. Similar legislation has been tried in expensive residential areas in California. So far no owner or builder has challenged their constitutionality. Meanwhile, Garden City's Board of Review—an attorney, an architect, a former architect, a realtor and the high school art teacher—will probably be able to put an end to modern architecture there. Conceivably, the board could also be used to stop merchant building.

AIA CONVENTION to stress link between design, environment

For the first time in 27 years, the AIA will hold its annual meeting in the area where AIA was born in 1857 and where one-fourth of its members live—New York City. Some 1,500 architects, wives and exhibitors are expected to check in at the Waldorf-Astoria during the June 24-27 convention. The AIA will present its gold medal to France's Auguste Perret, 77-year-old pioneer in the use of structural

(Continued on page 54)



Long-lasting Kentile adds colorful beauty to any room... offers low-cost sales appeal by giving prospects a quality brand they know and trust

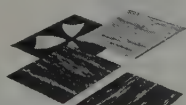
Lower building costs and raise quality with Kentile Floors

PROGRESSIVE BUILDERS and architects know that a house has to be built to sell... and they know that the nationally-advertised quality of Kentile provides them with a plus feature that home buyers recognize and appreciate... a brand name that stands for low-cost quality and industry leadership.

Kentile can be speedily and economically installed any place...over any smooth, firm, interior surface...even below grade over concrete in direct contact

with the earth. And, once in place, Kentile's wide range of modern decorator colors bring beauty for years and years...because the colors go all the way through the tough tiles and can't wear off.

Yes, the obvious advantages of Kentile's low cost and long life have made it first choice with the designer, builders and buyers of small homes... Everyone who demands a quality product to design, install, sell or live with.



KENTILE®

The Asphalt Tile of Enduring Beauty



KENTILE • SPECIAL (Greaseproof) KENTILE • KENTILE RUBBER TILE • KENCORK

KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 225 Moore Street, S.E., Atlanta 2, Georgia • 2020 Walnut Street, Kansas City 8, Missouri • 1440 11th Street, Denver 4, Colorado • 4532 South Kalin Avenue, Chicago 32, Illinois • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 58, California • 95 Market St., Oakland 4, Calif. • 452 Statler Building, Boston 16, Mass.

HEAT WITH ELECTROMODE



SAFETY

COMFORT

CONVENIENCE

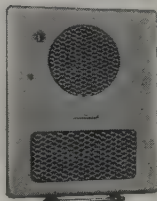
**Tell Your Architect or
Builder to Include Electromode
in Your Plans**

WHY choose Electromode? Because you use it all year 'round for heating when you need it and as a quick dryer for hair, clothing—even film. Your whole family will enjoy the abundance of clean, comforting heat from an Electromode Wall-Type Automatic Heater. Electromodes are safe . . . with their famous, patented, cast-aluminum heating element and built-in safety switch, there is no danger of fire, shock or burn.

WHERE can you use it? In the bathroom or any small room in your home, old or new. If you have a chilly bathroom, den, nursery, laundry room, it will pay you to buy Electromode.

HOW much does it cost? Only pennies a day for wonderful, extra convenience. Gives you years of dependable heating service and big saving in fuel dollars. Current is used only when heater is "on." Automatic control eliminates operation when no heat is needed. Just set the thermostat at the temperature you desire between 40° and 80° and forget it.

APPROVED by thousands of users. Electromode Heaters set a new standard for performance, value and beauty. Models available in white or chrome, automatic or non-automatic. 1320 watts, 110 volts, 4508 BTU input. Approved by the Underwriters' Laboratories. Buy today—heat tomorrow!



HEAT FOR BIG ROOMS

For more heat in those large cold rooms, from attic to basement, use Electromode Wall-Type Down-Flo Heaters. They're automatic too. Available 1500 to 4000 watts.

ELECTROMODE leader in electric heating since 1929, makes a complete line of electric heaters for home, office, camp, farm and industry in sizes and styles to meet any heating problem 1500 to 45,000 watts.



How To Get Your ELECTROMODE

Call your nearest electrical appliance dealer, electrical contractor, or fill in coupon and we will send complete literature and prices on Electromode Heaters of all types and sizes to meet your needs.

ELECTROMODE CORPORATION

DEPT. HH-42 • 45 CROUCH STREET • ROCHESTER 3, NEW YORK

NAME

ADDRESS

CITY STATE

concrete, hear talks on pre-stressed concrete, thin shell and dome construction, prefabricated concrete units, structural aluminum and the relation of structure to materials conservation.

The 84th annual convention's theme is "The importance of design of buildings in forming environments for human activity." Livening things up will be sightseeing tours to the UN buildings, Lever House, Stanford White's Morgan Library, the Metropolitan Museum's Cloisters, new skyscrapers, commercial buildings and housing developments.

To get the public architecture-conscious, AIA plans June-long exhibits of plans, photos, and models at museums and libraries throughout the city. More than 60 product manufacturers have arranged for displays at the Waldorf.

NEW PROCESS: aluminum-coated steel bids for galvanizing market

Some ten years ago, Göran Möller developed a process, in his native Sweden for "aluminizing" steel and iron and thereby rendering them rustproof, acid resistant and, up to 1,500°, heat resistant. The process never got far because aluminum is almost a semiprecious metal in Sweden.

Ex-War Production Board Chairman Donald M. Nelson, realizing aluminum was more plentiful in the U. S., but that the tin and zinc used in ordinary galvanizing and tin-plating were scarce, became interested. A few months ago, he set up the American Mollerizing (named after its inventor) Corp. in Santa Monica, Calif. to see what could be done about reducing the millions of tons of steel and iron lost annually through the corrosion of everything from fence posts to bridges. At the Santa Monica plant, molten aluminum is floated in the bath of an electric salt furnace. The steel and iron are submerged in barium chloride till they are as hot as the salt and then pulled up through the aluminum.

Nelson's "mollerizing" process will not be competing with lightweight pig aluminum (which is plentiful), but with the painfully short machine extruded processed alloys. In cost it will be cheaper than stainless steel, comparable to tin-plating and galvanizing. Nelson's first licensee is the Great Lakes Industries of Chicago which last month began "mollerizing" meat hooks for the packing firms. Another potential customer: the Defense Department which could mollerize Quonsets in the tropics, where rust now makes them short-lived.

(NEWS continued on p. 56)



LOW-COST THERMOPANE

... lets you put insulating glass in every window

This *Thermopane** insulating glass is made with the same time-proved, metal-to-glass *Bondermetic Seal** that has been used for many years in more than 2,000,000 units.

It's made of window glass (DSA quality) not plate glass. Hence, it costs less. This *Thermopane* has a full $\frac{1}{4}$ " air space between its two panes. Its insulation factor is .65, compared with 1.16 for single-paned windows. And so it cuts heat loss almost in half.

Thermopane is available in a number of standard sizes for various types of sash. To keep costs down, and thus provide *Thermopane* in every window of moderately priced houses, many builders are simplifying glazing by using only two standard sizes

of *Thermopane* insulating glass for the entire house.

They use the panel window system—with $45\frac{1}{2}$ " x $25\frac{1}{2}$ " lights for fixed openings and $42\frac{1}{2}$ " x $22\frac{1}{2}$ " lights for ventilators. A window can be made up of as many units as desired, set in a frame of 2 x 6's. This is so popular that in some parts of the country you can buy prefabricated frames shipped in a bundle to the site for quick assembly.

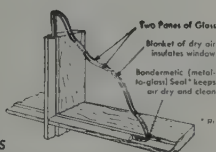
You can also use standard-size *Thermopane* of DSA glass in double hung and casement windows. Of course, for larger windows, and for windows where utmost clarity is desired, you'll want to use *Thermopane* made of L·O·F Polished Plate Glass.

Your L·O·F Distributor can give you more information. Or mail the coupon.



Thermopane

LOOK FOR THE NAME ON THE SEAL BETWEEN THE PANES



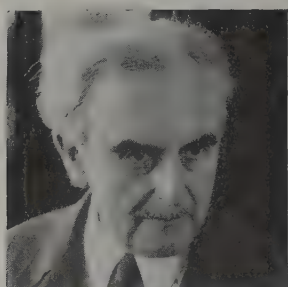
Libbey-Owens-Ford Glass Company
942 Nicholas Building, Toledo 3, Ohio

Please send me complete information on installation methods for low-cost windows of *Thermopane*.

Name _____
(Please Print)

Address _____

City _____ Zone _____ State _____



Designed by

RICHARD J. NEUTRA

Built by C. W. Drivers, this superb office structure was acclaimed "one of the finest erected since World War II" by the Southern California AIA. We are proud that ALFOL BUILDING BLANKET INSULATION was used in its construction.

**NORTHWEST MUTUAL
FIRE INSURANCE
BUILDING**
LOS ANGELES, CALIFORNIA.

ANOTHER ALFOL *Installation*

Now, for commercial and residential construction alike, more and more leading architects are specifying ALFOL BUILDING BLANKET Insulation. Compact, lightweight, permanent, ALFOL does two jobs in one. Its pure aluminum foil surfaces instantly and continuously reflect 95% of all radiant heat. And ALFOL, because it is applied in a continuous length across the stud faces, provides the finest vapor barrier obtainable—at any price.

REMEMBER ONLY ALFOL HAS BOTH THESE GREAT FEATURES

1. Suspended aluminum foil sheets providing multiple-reflective air spaces.
2. Heavy water-proof duplex backing for continuous moisture protection and positive application support.

ALFOL

• Write Dept. A-3 for free Architects Data Book and complete specifications.



FIRST IN REFLECTIVE INSULATION

ALFOL INSULATION • 155 E. 44th St., ... NEW YORK 17, N. Y.

BUILDERS INVEST from 2 to 55% in homes, HHFA finds

To HHFA researchers, financing of home construction was an almost virgin field. So the agency earmarked an \$8,500 slice of its \$775,000 research fund in the 1951 budget to take a scholarly look at the workings of construction loans in the Pacific Northwest. The results, compiled by Associate Professor Bayard O. Wheeler of the University of Washington, were divulged recently. Principal findings:

► On conventional mortgages, construction loans averaged 77% of total construction costs (which exclude land cost and builder's profit), and builder's investment averaged 23%. But builder investment varied all the way from 2% to a surprising 55%. Where builders held FHA or VA commitments, their average investment dropped to 20%.

► Interest rates on construction loans varied so little (common charge was 5% per year plus a 1% flat service charge) that Wheeler concluded Northwest lenders select their risks at going rates rather than letting the rate fluctuate according to the hazard. Wrote Wheeler: "In effect, these builders are ineligible for loans whose plans, specifications, and other characteristics of the proposed dwelling do not conform to the lenders conception of the standard mortgage risk."

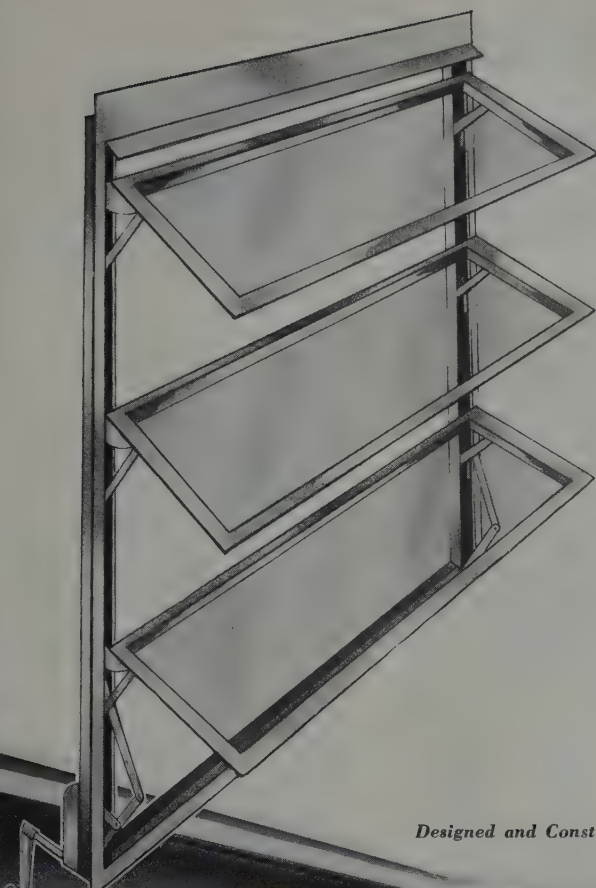
► On the other hand, lending institutions were forced to offer construction loans to obtain good permanent mortgages in a highly competitive market. Some lenders were forced to offer less leaders in construction loans to attract mortgages. Thus Wheeler concluded: "There is not a separate construction loan market, but only a mortgage credit market . . . the demand for mortgage investment and not construction investment is controlling."

► Construction loan interest alone added an average of 1.46% to the selling price on a \$10,000 home. Where builders had to pay a service charge as well as interest, the average cost jumped to 2.7% of the total cost of the home—more than the tab for electric wiring.

► Executives of 34 lending institutions put their reasons for rejecting construction loan requests in this order: 1. Builder lacks sufficient working capital to complete project. 2. Builder underestimates cost. 3. Lender doubts builder's ability to complete project in reasonable time. 4. Inadequate information on builder's financial condition. 5. No FHA commitments. 6. Builder overestimates cost. 7. Location of property. 8. Past performance of builders. 9. Poor credit risk. Least important were: construction prior to loan application, speculative building, and builder's integrity.

► For houses priced under \$7,000, construction loans were hard to get. Many lenders considered them unfavorable risks even though the mortgage might be fully insured, because the costs of making and servicing a smaller mortgage absorb a higher proportion of the return and because low cost might mean inferior construction which in itself would increase the investment risk.

► Builders complained lenders offered inadequate credit for site improvement and for construction in small outlying areas.



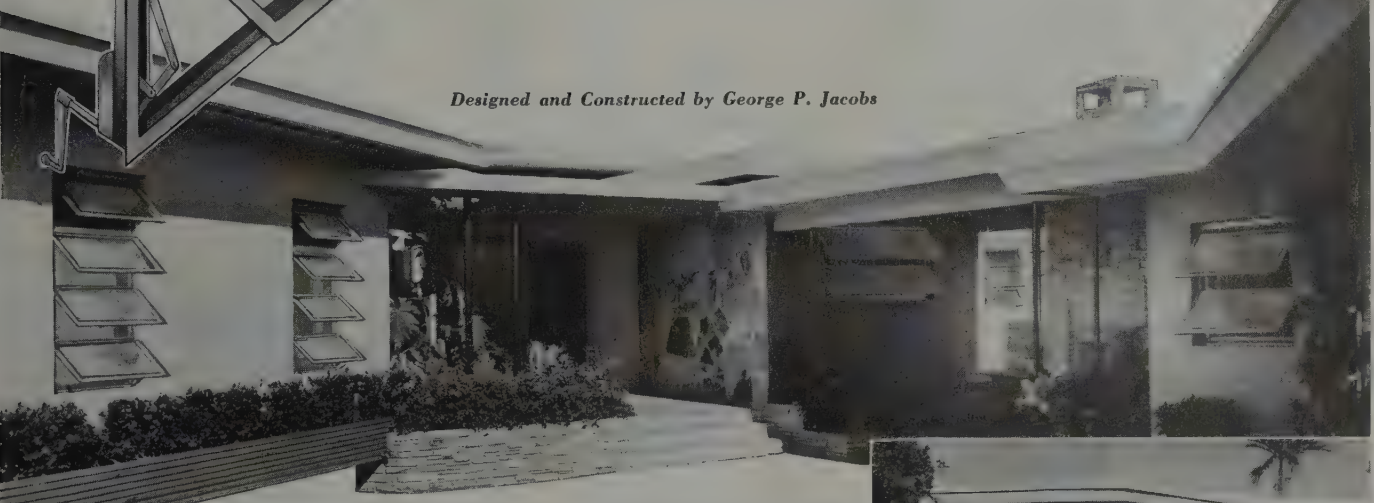
lasting beauty...

**IN ALL-ALUMINUM
MIAMI AWNING WINDOWS**

The flashing, easy grace of aluminum alloy is captured in Miami Window's basic design. Here is window beauty that never needs painting, never needs repairs, stays strong and beautiful year after year.

- Constructed from extra-heavy aluminum alloy sections (63-ST5).
- Both sides of vent sections are actuated with equal pressure through a patented, concealed torque shaft allowing easy, balanced opening and closing.
- Positive weather-tight closing. (Plastic weather-stripping optional.)
- Available for immediate shipment.

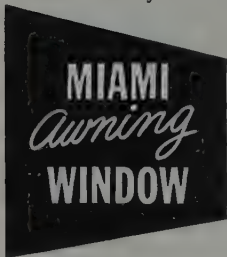
Designed and Constructed by George P. Jacobs



For fine installations in schools, hospitals, office buildings and small homes, specify the all-aluminum Miami Awning Window.

Member — Aluminum Window Manufacturers Association

Air Infiltration Tests Taken by Pittsburgh Testing Laboratories



MIAMI
Awning
WINDOW

For further information, see Sweet's
Architectural File ^{17A}_{MI} or — write,
wire or phone Miami Window
Corporation, Dept. BH-4.



MIAMI WINDOW CORPORATION 5200 N. W. 37th Avenue, Miami 42, Florida

Add a PLUS to your plan with an "PACKAGE" ATTIC FAN!



NO "EXTRAS." Everything needed arrives on job in a package. Including automatic ceiling shutter, from \$154.93*, retail.

Highlight that SELLS the house!

Plan cool summer comfort into a home and it's easier to sell. The owner's family is happy, he's proud, and he tells his friends of your thoroughness, your thoughtfulness.

Easy installation. R & M "Package" Attic Fans with certified air deliveries of 4750 and 6800 CFM cut installation costs to the bone. Fan simply sets over roughly framed opening, no finishing needed. Rubber cushion seals fan frame to ceiling opening. Ceiling trim is part of complete automatic shutter assembly. Also available in easy-to-install sizes up to 16,000 CFM.

Ideal for low attics and all standard hallways. Perfect for "moderns" with limited attic clearance. Quiet, too. Moving parts are rubber-mounted. Factory-lubricated, sealed ball bearings on fan and motor. Fan guaranteed five years; motor and shutter, one year.

An informative, fact-filled booklet on R & M Attic Fans is yours for the asking. Send the coupon for your copy now.



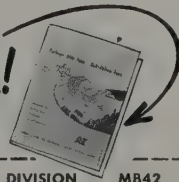
Consult Sweet's Architectural File for complete Robbins & Myers cooling and ventilating data.

ROBBINS & MYERS

"Package" attic fans

Atlanta, Boston, Chicago, Houston, Kansas City, Los Angeles, Minneapolis, New Orleans, New York, Orlando, Philadelphia, San Francisco, Springfield, Ohio

IT'S FREE!



A FEW ITEMS FROM THE TABLE OF CONTENTS!

- Comfort cooling by attic ventilation.
- Round-the-clock comfort with air cooling.
- How to determine fan size.
- Installation for any type of home.
- Commercial ventilating and cooling details.
- Industrial ventilation—principles and methods.

*Price subject to change without notice

ROBBINS & MYERS, INC., FAN DIVISION MB42
387 So. Front St., Memphis 2, Tennessee
Please send me your booklet—"Robbins & Myers Package Attic Fans, Belt-Driven Fans," A.I.A. File No. 30-D-1.

Name.....
Address.....
City.....Zone.....State.....

LETTERS

Sirs:

HOUSE & HOME will be a valuable assistance to me in my work. Congratulations on being the first to publish another leading magazine of the times!

EARL W. DODD
Palm Springs Paint Co.
Palm Springs, Calif.

Sirs:

"Rigid Interest Rates Won't Work" by Miles Colean (H&H, Mar. '52) is quite interesting and well written.

AUBREY M. COSTA, President
Southern Trust & Mortgage Co.
Dallas, Tex.

Sirs:

Bless you for the *News* section in which you keep us up to date on the financial and political angles of the building business.

We know how to build good houses and try to give our men and our customers the full benefit of our building knowledge. What makes it tough, though, is the whipsawing we get from the mortgage market, government regulations and the stupefying mass of paper work thrown upon us.

Your March *News* section cleared up a number of points in my mind for the first time, and if you can keep up this good work your magazine will be as indispensable to us as nails.

HENRY DRYFOOS III
Conyngham Housing & Development Co.
Hazelton, Pa.

Sirs:

... Congratulations on your latest and most excellent publication, HOUSE & HOME.

DON HEDLUND
Carroll, Hedlund & Associates, Inc.
Seattle, Wash.

Sirs:

... Congratulations are certainly in order to you for the birth of HOUSE & HOME. Your magazine has always been a wonderful source of information and help. The HOUSE & HOME edition fits our needs even better.

THOMAS E. MILLER
The Berry Schools
Mount Berry, Ga.

Sirs:

... Delighted to have a magazine equal in stature to ARCHITECTURAL FORUM which is devoted to the interests and problems of those of us who are primarily interested in residential rather than industrial or institutional building.

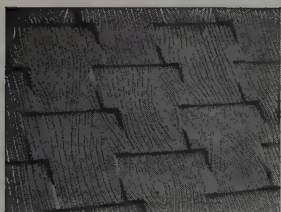
JAMES CRABB, Designer, Builder
Wilmette, Ill.

Sirs:

I can truthfully say that HOUSE & HOME is a fine magazine and should be advantageous to the building trades.

W. R. REYNOLDS
Rose City Pre-Cut Buildings, Inc.
Portland, Ore.

(Continued on page 60)



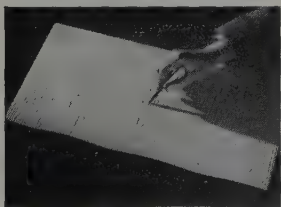
Tite-On Shingles . . . the ingenious interlocking shingles that provide real wind insurance. They're locked together and held in place by four concealed nails. Fire-resistant, easy to apply.



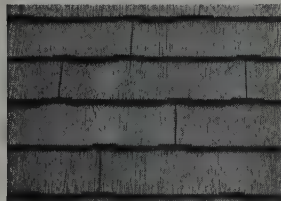
Thick Butts . . . extra thick, extra rugged where protection counts. In rich colors and blends . . . smooth or textured. Thick Butts are built on heavy felt, saturated with heavy-duty asphalt.



Cold Method Built-Up Roofs . . . the perfect answer for the small roof job too flat in slope for shingles or roll roofing. Simple, economical to apply without expensive melting kettles.



Vitramic Asbestos Siding . . . the permanent beauty treatment for old homes or new. Vitramic's hard, ceramic-like surface stays cleaner, brighter, lastingly beautiful. White, Cream, or Gray.



Mount Vernon Asbestos Roof Shingles . . . offer lifetime beauty, fireproof protection and economy. Staggered butt lines produce deep, irregular shadows. Weather-aged cypress texture.

Ruberoid Roll Roofing . . . the original and still the best after 60 years of proved performance. Smooth-surfaced. Mineral-surfaced and Dubl-Coverage, which offers virtually a built-up roof.

Shake-Design Roll Siding . . . gives old homes new life and saves money too! Shake-textured beauty, lasting fire and weather protection open the door to low-cost modernization jobs.

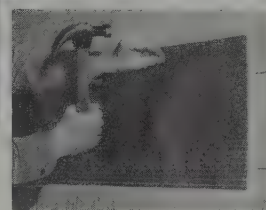
StoneWall Board . . . the asbestos-cement building board of 1,001 uses. Ideal for soffits, partitions, garages, closet linings, etc. Fire-proof, rat-proof, rot-proof, rust-proof, rugged, yet easy to work.

Beauty, Quality, Economy

specify these famous Ruberoid products for extra sales appeal



You'd have to see this house in color to appreciate what Color-Grained Siding means in bringing custom-styled beauty to high or low budget homes. Inset shows ShadoWedge, just introduced by Ruberoid to provide the perfect combination with Color-Grained Siding.



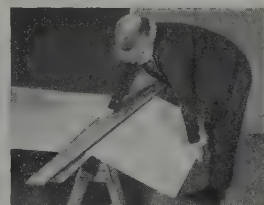
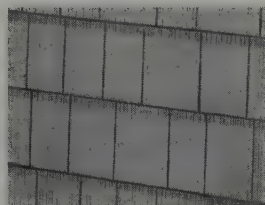
Color-Grained Siding . . . Ruberoid's new decorator-designed asbestos siding, which is creating a sensation in the siding market. It's an unprecedented advance in sidewall beauty, accomplished through a unique process of blending color and texture.

ShadoWedge . . . Ruberoid's new beauty aid for builders, is a tapered asphalt undercoursing strip. It's a brand new product designed to add sales appeal to new homes or remodeling jobs. ShadoWedge creates deep shadow-lines . . . is fast and simple to apply . . . no sheathing or joint strips needed.

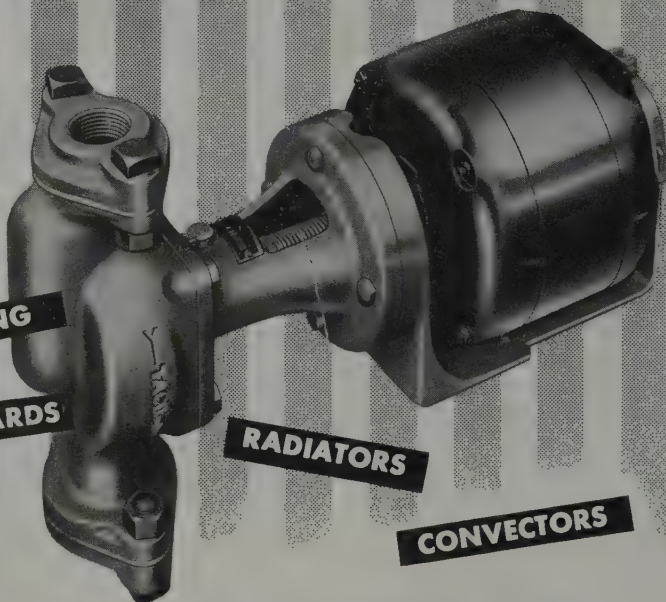
These leading Ruberoid products offer you greater expression in color and texture . . . plus economy that enables you to provide quality construction within today's budgets. See Ruberoid's Roofing and Siding Materials Catalog in the Sweet's Architectural File for 1952 — Section 8c/RU.

The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS



get FAST, RESPONSIVE HOT WATER HEAT for



PANEL HEATING

BASEBOARDS

RADIATORS

CONVECTORS

with this popular TACO CIRCULATOR

EVEN LOW BUDGET HOMES CAN NOW HAVE THESE LUXURY ADVANTAGES

RADIANT WARMTH • DRAFTLESS WARMTH • CONTROLLED WARMTH

MORE HOT WATER FOR KITCHEN, BATH AND LAUNDRY

Yes, forced hot water heat with a TACO circulator gives all this *plus* economical warmth. No need for a separately fired water heater. TACO TANKLESS, hooked up to a heating boiler, supplies year 'round low cost hot water.

The TACO circulator delivers heat where it will give the greatest comfort . . . whether you use radiant panels, convectors, radiators or baseboards.

**ARCHITECTS-ENGINEERS
WRITE FOR . . . SIMPLIFIED
SELECTION CHART FOR SIZ-
ING TACO WATER HEATERS
UNDER ANY CONDITIONS.**

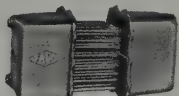
Three other famous TACO PRODUCTS for houses

TACO-VENT



eliminates air
from hot water
radiation
automatically

TANKLESS TACO



gives an abundant sup-
ply of hot water instantly.
No need for storage tank.

TACO TEMPERING VALVE



thermostatically
mixes hot
water with
cold so there's
no danger of
its being too hot.

**Better Heating-
Better with Taco**



TACO HEATERS, INCORPORATED • 137 SOUTH STREET • PROVIDENCE 5, R. I.

LETTERS

Sirs:

Your story concerning the possibility of a private central mortgage discount bank (H&H, Mar. '52) was written in an interesting fashion.

WILLIAM K. DIVERS, Chairman
Home Loan Bank Board
Washington, D. C.

Sirs:

. . . Your magazine is just what the trade needs. Congratulations on filling a long needed requirement in the home industry.

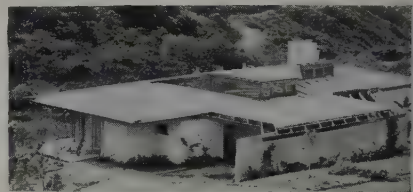
J. HANDLOSS
Newark, Del.

DRIVE-THROUGH CARPORTS

Sirs:

What remains an excellent solution to the garage problem was published by you years ago (Mar. issue '40). As I recall, you made the point that on a hillside, a drive-through carport obviates the need to level off a large space for a turn around.

T. W. CHILDS, JR.
The American Metal Co., Ltd.
New York, N. Y.



Harwell Hamilton Harris designed the house (above) in Hollywood, Calif., with a drive-through garage (the word carport was not then in general use) adjoining the front door. More recently, California architect Paul Williams used a variant of this idea for a model house. His driveway runs in an arc to the front door; the two-car carport is plumb in front of the entrance door, separated from it only by a small porch. A big overhang from the house covers the porch and forms the roof of the carport—Ed.

A KIND WORD FOR FHA

Sirs:

Your second attack on the Los Angeles office of FHA in recent months calls for some defense in its behalf. Some of the criticism is probably justified, but I cannot help shuddering at some of the plans floating around this area . . . turning out a chicken shed, leaving off the doors, putting the stove in the living room, and telling everyone it should be accepted because it is "modern" and "new thinking" is a poor excuse for proper design and planning.

Let's be fair to FHA and not criticize them for turning down bad "modern." "Modern" can be good or bad in design or plan, as can any other style of architecture. And don't shoot! We lend on lots of "modern" buildings!

RUSH C. HINSDALE, Real Estate Loans
Beverly Hills, Calif.

(Continued on page 62)

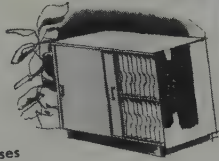
and now there are **23** types and thicknesses
of **MASONITE PRESWOOD**
to do a thousand jobs better!

—in the home

—on the farm
—along Commercial Avenue and Industry Road

**Newest members of the
MASONITE PRESWOOD
family!**

**Standard DUOLUX
Tempered DUOLUX**



- each in $\frac{1}{8}$ " and $\frac{3}{16}$ " thicknesses
- in 4-ft. and 5-ft. widths, up to 16 ft. long

Both sides are super-smooth!
Both sides take beautiful, lasting finishes!

Use Duolux for every job
that needs both surfaces exposed!

**MASONITE
Standard
PRESWOOD®**



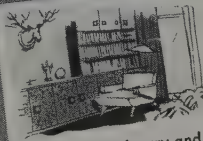
The original hardboard. Denser than most woods. Hard, smooth surface on one side, screen impression on other. For interior walls, ceilings, etc. In $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ " and $\frac{3}{8}$ " thicknesses.

**MASONITE
Tempered
PRESWOOD**



World's best known hardboard. Tempered to extra hardness; greater strength, abrasion and weather resistance. In brown or black. Each shade in $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ " and $\frac{3}{8}$ " thicknesses.

**MASONITE
Leatherwood**



Offers the luxury and rich appearance of Spanish-grain leather in rigid panel form. Unlimited design possibilities in homes, schools, stores, offices, etc. $\frac{1}{8}$ " thick.

**MASONITE
Temptrile®**



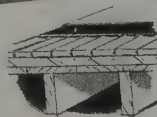
Tempered for durability and moisture resistance. Score lines in large panels form attractive 4" tile pattern. $\frac{1}{8}$ " thick.

**MASONITE
Panelwood®**



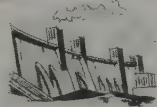
Low-cost panel material for walls and ceilings. Ideal for converting unfinished space into attractive rooms. $\frac{3}{16}$ " and $\frac{1}{4}$ " thicknesses.

**MASONITE
Underlayment**



Levels the ridges over sub-floors or old wood floors. Improves wearability when used under linoleum, asphalt tile, rubber tile, cork tile or carpeting. 3x4-ft. and 4x4-ft. panels, $\frac{1}{4}$ " thick.

**MASONITE
Concrete Form
PRESWOOD**



A special Tempered Preswood, insuring smooth concrete surfaces, virtually eliminating costly hand finishing. $\frac{3}{16}$ " and $\frac{1}{4}$ " thicknesses.

BETTER HARDBOARDS FOR BETTER BUILDING



MASONITE® CORPORATION
DEPT. AF-4, BOX 777, CHICAGO 90, ILL.

"Masonite" signifies that Masonite Corporation is the source of the product



Styled AND BUILT

TO THE MODERN IDEA IN BATH FACILITIES

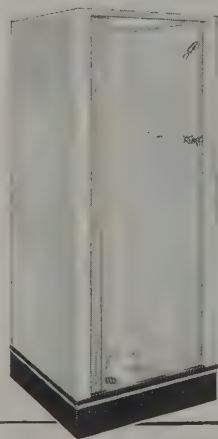
In clean-lined functional design, structural integrity, service-tested materials, Weisway Cabinet Showers fit perfectly with the most advanced building techniques—and provide the perfect answer to the rapidly growing preference for shower bathing. Space-saving Weisways make added baths easily possible in homes of all sizes.

Comfort, safety, sanitation are all served by leakproof Weisways with the exclusive Foot-Grip, No-Slip floor of vitreous porcelain—easy to keep clean and thoroughly non-absorbent. Weisways are complete, self-contained units, not affected by shrinking or settling of surrounding materials.

Your clients are assured long years of satisfaction, and your reputation is protected when you specify Weisway Cabinet Showers. Write for catalog with detailed information.

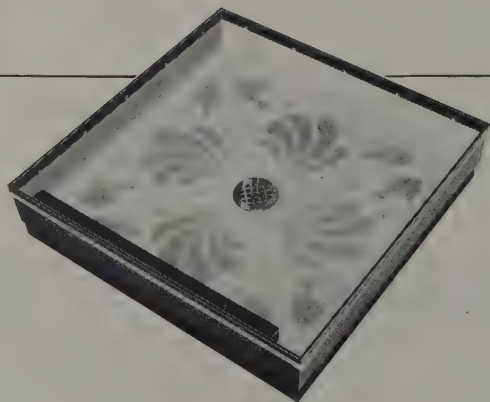
Weisway CABINET SHOWERS

HENRY WEIS MANUFACTURING CO., INC.
442 Weisway Building, Elkhart, Indiana



Weisway Model VR meets your quality standard for fine homes. Unit shown in bathroom illustration above is Weisway VRC, corner entrance model.

Vitreous porcelain enamel, fused on one piece of heavy enameling iron, provides a positive leak-proof base. Textured floor is safe, comfortable, sanitary.



Sirs:

I know when I'm outpointed.

I am a plain, blunt, frontier character, myself. I use just the plain speech of the canaille, which I used to work on. The Erie Canaille. I am not one to go for the rarefied syllables you have taken to throwing about lately. I get the impression from your language that the next time I meet one of your writers he will be wearing a beret. But berets are not the worst of it; whoever is writing the letterpress accompanying your pictures is having halo trouble. He is handing down stuff from On High. He is Telling Them.

No doubt by this time you have heard enough about that house of Van der Rohe's but the news that Mies, as we call him down at the fire barn, got \$27,000 for designing that deal changed my whole attitude. Hereafter when I tell some client what I propose to charge him and he says, recoiling, "That much? Who do you think you are, anyway?" I will say to him, "No, I do not think I am Anyway. As far as I know, there is no eminent architect named Anyway, although I may be wrong. I think I am Van der Rohe."

I spent a lot of time figuring out the ideal female tenant of that H-beam and glass canoe and finally, with an assist from a printer in the composing room of the Oklahoma City Times, I finally got it. Here it is, the way he described her:

"The bride is bolted together in sections and moved forward on rollers."

Before you confused yourself with the Book of Revelations you were a lot of fun. Do not think that I am quitting you, or canceling my subscription or any of that stuff. No, indeed. In the first place it would be next to impossible to get my subscription affairs straightened out, as they are in such a state that impartial experts after surveying the matter have advised me to commit suicide and let probate court wrestle with the problem. You see it is like this: I have had for some years *two* subscriptions to Building, Forum, House & Home, Castor and Pollux, His and Hers (I know a fellow with a two-stall garage marked His and Hers, and I don't like him for other reasons, too), in-laws and out-laws or whatever. . . .

The reason I had two subscriptions was so the drafting room would have one and I would have one. One to cut up and one to keep. My plan is to have the boys in the drafting room, who are young, vibrant, in the prime of life, read both copies and then come in and chant to me certain less inflammable selections while my secretary accompanies them on a zither.

As the dawn comes up over Elsinore, I pick up the dice and bid a last adieu to the letter columns of Building, Forum, House & Home, Pick and Pat, Hot and Cold, or whatever. You were a nice magazine while you had it, and brother, you've had it.

ROGER ALLEN, A.I.A.
Grand Rapids, Mich.

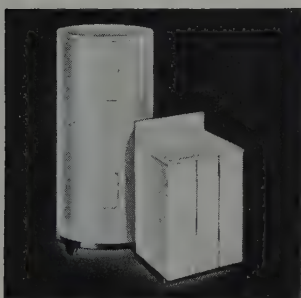
(Continued on page 64)

"Luxury homes need **electric** water heaters,"



These rambling, farmhouse-style homes, built by Mr. Robert Stewart in Encino, California, are in the \$35,000 to \$50,000 price class. To shorten hot water lines, one of the two Electric Water Heaters is located in a corner of the garage.

SAYS CALIFORNIA BUILDER ROBERT STEWERT



"The people who buy my homes want luxurious but informal living," says Mr. Stewart. "That's why I usually include *two* Electric Water Heaters in each house. They not only provide automatic hot water and plenty of it—but I can install them efficiently, to avoid long pipe runs and insure economical operation. I'm able to do this because the *Electric* Water Heater has no flue or vent, and can be installed anywhere. Other features which customers like are the cleanness and long life of the Electric Water Heater. It provides the kind of service demanded today not only in upper-bracket homes, but in *every* type of home."

Equip Your Homes with
electric water heaters

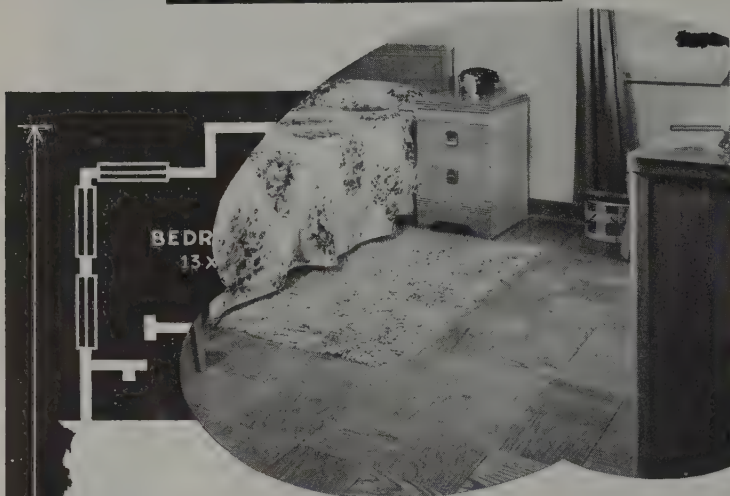
**THEY'RE WHAT
PEOPLE WANT!**

ELECTRIC WATER HEATER SECTION
National Electrical Manufacturers Association
155 East 44th Street, New York 17, N. Y.

ALLCRAFT • BAUER • BRADFORD • CRANE-LINE SELECTRIC • CROSLY • DEEPFREEZE
FAIRBANKS-MORSE • FOWLER • FRIGIDAIRE • GENERAL ELECTRIC • HOTPOINT • HOTSTREAM
JOHN WOOD • KELVINATOR • LAWSON • MERTLAND • MONARCH • NORGE • PEMCO • REX
RHEEM • SEPCO • A. O. SMITH • THERMOGRAY • TOASTMASTER • UNIVERSAL • WESIX • WESTINGHOUSE

Smart "FLOOR" PLANS

FEATURE PARKAY



The Genuine Hardwood Flooring 3/16" Thick for Economy— Factory Finished for Beauty

Parkay gives you smart styling at substantial savings. This genuine hardwood flooring is only 3/16" thick—conserving costly material without sacrificing wearing surface; permitting use with other resilient floor materials, without changing floor levels.

Parkay is factory finished, assuring a lasting lustré and richness that would be difficult and costly to duplicate on the job. It is applied with Parkay Adhesive over any smooth, sound subsurface—wood or cement. Once down, it's ready for immediate use—a beautiful and enduring hardwood floor that costs little or no more than ordinary strip finished on the job.

Parkay flooring of choice American Oak is offered in 9" x 9" Tiles and 9" wide Broadboard in random lengths. Both may also be used to produce attractive paneled walls. See Sweet's Architectural File or write direct for free literature and sample. Parkay, Incorporated, Dept. H, Louisville 9, Ky.



PARKAY

READY-FINISHED HARDWOOD
FOR FLOORS AND WALLS

LETTERS

FROG POND ORNAMENT

Sirs:

... Modern architecture may now have all the mossy charm of antiquity at bargain prices. How? Simply by the application of *lichenaceous ornament* (H&H, Jan. '52)—modern moss—along the eaves, fascias, and balconies of John Lloyd Wright's brave new world. No wide boards and not much money left, only enough for folding partitions, acres of plate glass, cubby-holes and push buttons, we now have available heart-warming fungus at \$1.95 a yard which we are told "unites soul and pocketbook."

Recently Richard Neutra said, "For a long time ornament has been dead." Evidently, he overlooked that modest life still being enjoyed by our cryptogamous cousin, the lichen. If lichens, then mold. Penicillin, the glorified mold, is surely the next step toward ornament. Or shall we stop with algae, the frog pond? Yours for the rolling stone, which, it is said, gathers no lichenaceous ornament!

ALLEN G. SIPLE, *Architect*
Beverly Hills, Calif.

CLIENT'S POINT OF VIEW

Sirs:

The frequency with which designers and clients seem to find common meeting grounds, temporary though they may be, is definitely higher than it has ever been in the past. It seems logical to ask that the client's point of view be somewhat more in evidence in your critiques. Let's not cheer too soon but it looks as though education is beginning to take hold. Conceivably it just might cut down some of the raving and ranting if Dr. Farnsworth's personality was brought into a little bit sharper focus.

R. B. CUTLER
Manchester, Mass.

MORE HOME, LESS HOUSE

Sirs:

... I do wish you would have some heads on your headless beauties and not always go so completely modern as to have most of your houses without roofs.

If your house on the January cover and most of the others had a 6 or 8' ridge and sloping roof then the owners would have more Home and less House...

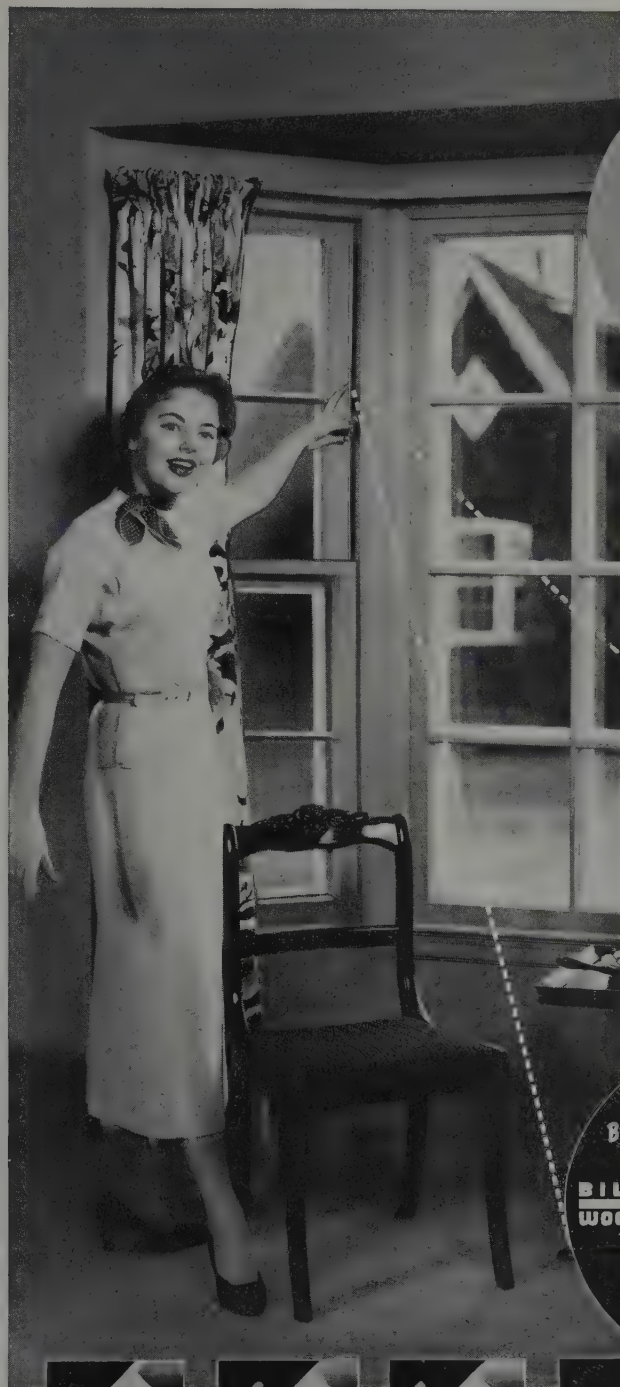
GUYON L. C. EARLE
Earle Kitchen Unit Co.
New York, N. Y.

Sirs:

Your editions are superb... constructive and esthetic. The photographs and drawings are precious guides for us European architects.

ANTONIO SIMON, *Architect*
Sassari
Italy

(Continued on page 66)



BILT-WELL

Superior Windows

give complete weathertight protection and slide easily at all times

Laboratory tests prove that Bilt-Well Superior Windows have almost double the weathertight efficiency required by the American Wood Window Institute's Specification.

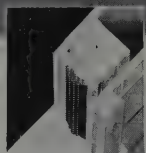
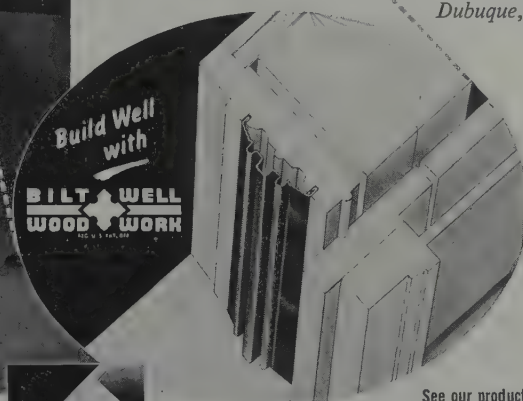
And, although Bilt-Well Superior Windows fit snugly, they open easily and quietly and slide smoothly under all weather conditions.

This unusual ease of operation is due to the patented Superior flexible Jamb-liner Weatherstrip which regulates the snug fit. In addition, the window is counterbalanced.

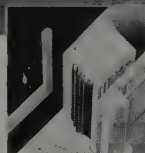
And, for you who are close to the building industry, here's special news! Bilt-Well Superior Windows are now adjustable to various wall thicknesses. See illustrations. Write us for further information.

CARR, ADAMS & COLLIER CO.

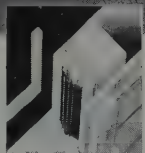
Dubuque, Iowa



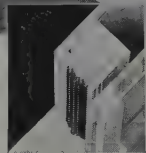
25/32" outside sheathing and 1/2" lath and plaster on 2 x 4's—and Superior full width jamb.



25/32" outside sheathing and dry-wall (3/8" or 1/2") inside on 2 x 4's, and "Superior" minus inside strip on jamb.



1/2" outside sheathing and dry-wall (3/8" or 1/2") inside on 2 x 4's, cut-off rib on blind stop and remove inside jamb strip.



1/2" outside sheathing and 3/8" dry-wall applied over 1/2" insulation board on 2 x 4's, cut-off rib on blind stop.

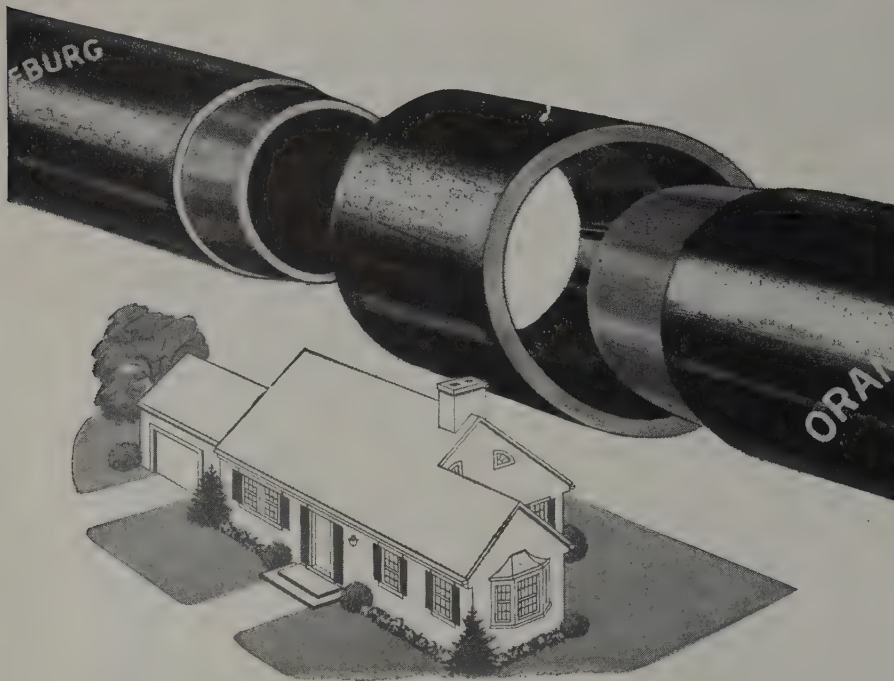
See our products in

Sweet's Architectural Catalog pages 24B/CA and 17C/CA

Here's a list of the BILT-WELL LINE

Superior Unit Wood Windows • Exterior & Interior Doors • Entrances and Shutters • Clos-lite Casements • Carr-dor Garage Doors • Basement Unit Windows • Louvers & Gable Sash • Combination Doors • Screens & Storm Sash • Corner (China) Cabinets • Ironing Board Cabinets • Mantels & Telephone Cabinets • Nu-Style & Multiple-Use Cabinets • Stair Parts.

ROOT-PROOF JOINTS



ORANGEBURG® PIPE AND FITTINGS

More and more Architects, Engineers and Builders turn to Orangeburg Sewer Pipe and Fittings for root-proof, sanitary installations. And since a sewer pipe is only as root-proof as its joints, Orangeburg originated TAPER-WELD® JOINTS to seal pipe and fittings permanently against root entry, infiltration or leakage.

Root Prevention for Entire Pipe Line

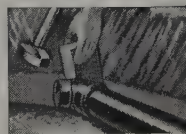
Orangeburg assures it. That's why Orangeburg Pipe is extensively used in House-to-Sewer (or Septic Tank) connections; downspouts, storm drains; tight-joining drainage lines; conducting potable water supply—all non-pressure outside uses.

Orangeburg Insures a Quality Installation

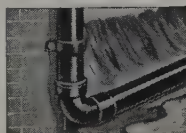
Orangeburg is non-metallic, resilient. It resists acids, alkalies, salts, oils, greases and gases found in sewage wastes and soils. No cement or compounds are needed.



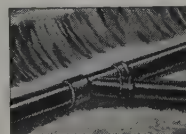
House-Sewer



Conductor Lines



Storm Drains



Eight foot lengths are easy to install. Orangeburg fittings— $\frac{1}{8}$ and $\frac{1}{4}$ Bends and Wyes—are made of Orangeburg material and tooled for Taperweld Joints.

Many Uses also for Orangeburg Perforated Pipe

...including Septic Tank disposal fields; foundation footing drains; draining wet spots in lawns, drive-in theaters, athletic fields, parking lots, airports, etc. Orangeburg Snap Couplings keep pipe in line, prevent silting at the joints. The new Orangeburg Fittings are also widely used with Orangeburg Perforated Pipe.

Remember—Orangeburg originated this modern pipe. Pipe and fittings are stamped with the Orangeburg trademark. For your protection, specify Orangeburg—the original!

SEND FOR NEW CATALOG 306-MB4, for important data.



ORANGEBURG MANUFACTURING COMPANY, INC., ORANGEBURG, NEW YORK

LETTERS

Sirs:

What has happened to the FORUM (THE MAGAZINE OF BUILDING)? . . . The policy, quality of material and presentation have been increasingly better, as far as I can see, for a number of years but there has been a marked change in the last few issues. If I were to close my eyes and get my wife to read aloud to me some descriptions of the work presented, I would almost believe I were hearing copy from a woman's home magazine! The "starry-eyed" rapturous words—utter and complete perfection of whatever the thing was!

I am sure I am not alone in believing that there are no such things as "ultimate" and "perfection"—just attempts toward them. In these attempts, why not admit a little error?

THORNTON M. ABELL, Architect
Santa Monica, Calif.

Sirs:

I read John Lloyd Wright's article on "Lichenaceous Ornament," (H&H, Jan. '52) and justification for it, the main reason being "modifying the severity of structural design by the application of enrichment," using standard units which could be produced in mass quantity, therefore at lower cost.

This brings up two considerations: who would use them, and how would they use them?

It seems to me, the application of enrichment in the elimination of barrenness is a highly limited practice in its proper use. First it can only be done by those few who have the sensitivity and sense of fitness to use it on problems that permit it (playful themes), or temporary structures, or displays. You can readily imagine the effects many people would produce, using block enrichment of whatever shape. Second, the intention animating what is done.

Whether mass production technique is appropriate for elements of decoration is a question. Mass production is certainly the method of many items of use, and parts of structure, mechanical equipment, etc. I suppose it can be said Nature produces, in mass production, the foods and raw materials.

The architect more and more uses mass-produced parts in the design of the buildings, so following the trend of modern practice, it would seem reasonable to supply him with synthetic fruits and flowers to bedeck his buildings with, however abstractly they might be treated. The prospect does not seem a very happy one.

I think you have brought up a most important subject for consideration, and the above thoughts are my answer to the problem. I hope others will express views on how to solve this current trend of mechanized, laboratory tested, sterile effort at low cost production of housing, and bring to it a little of the divine fire that makes life more significant.

ALFONSO IANNELLI
Iannelli Studios Designs
Park Ridge, Ill.

with **AMERICAN-Standard** PLUMBING FIXTURES

● Builders and real estate men find that the two-bathroom feature is a major consideration when people choose a house today. And a two-bathroom house equipped with American-Standard products has even greater appeal . . . for American-Standard products have a reputation for smart styling and sturdy construction that has created wide public preference.

Builders of the two developments illustrated here have created homes with outstanding buy-appeal. Each of these modern houses has at least *two* bathrooms, smartly fitted with American-Standard plumbing fixtures.

Remember, when *you* build, that today's homemakers consider a second bath a "must" facility for everyday convenience. Remember, too, American-Standard offers you a wide line of *both* plumbing fixtures and heating equipment. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pennsylvania.



BENBROOK ESTATES, INC., TENAFLY, NEW JERSEY.

Builders: Benjamin Brothers, Tenafly, N. J.

Architect: Fred Harsen, A.I.A., Tenafly, N. J.

Plumbing contractors: Hanson and Maul, Inc., Bergenfield, N. J.

Plumbing wholesaler: Standard Heating & Plumbing Supply Corp., West New York, N. J.

BATHROOM ELEGANCE . . . IN MATCHING COLORS. Each home in the 122-house Benbrook Estates development has 2½ American-Standard equipped bathrooms, affording an unusual amount of convenience for the occupants. The fixtures, in handsome matching colors, are: Companion lavatory, Compact water closet (both made of lustrous genuine vitreous china), and enameled cast iron Master Pembroke bath.

AMERICAN-Standard BATHROOMS



Serving home and industry

AMERICAN STANDARD • AMERICAN BLOWER • ACME CABINETS • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

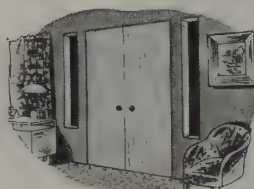
SOSS
INVISIBLE
HINGES

"HIDE the HARDWARE"

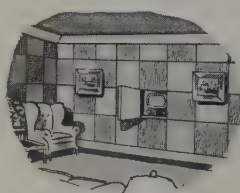
says

**FRANK
LLOYD
WRIGHT**

"My efforts since I've been practicing for myself, is to get rid of it. The less hardware that is in evidence, the better. The more you get the hardware out of sight, and make less of it, the more you are going to be modern and in line with modern architecture."



IDEAL FOR FLUSH DOORS



PERFECT FOR WALL PANELS

- 1 The Soss Invisible Hinge was designed to stay out of sight. It is the only all NEW hinge since Noah built his ark.

"The less hardware that is in evidence the better."

- 2 The Soss Invisible Hinge is also known as "the hinge that hides itself."

"Hardware is still too ornamental—it isn't sufficiently simple."

- 3 What could be less ornamental or more simple than something you can't see—like the Soss Invisible Hinge?

"Hardware should be something that really works and should be out of sight—"

- 4 Soss Hinges "really work" smoothly and quietly on hardened steel roller bearings.

★ All quotes taken from Mr. Wright's address before the Pacific Coast members of the American Society of Architectural Hardware Consultants and the National Contract Hardware Association at the Arizona Biltmore in Phoenix, Arizona.

Write for **FREE CATALOG** that gives complete details, blueprint templates, and the many uses of this modern hinge to . . .

SOSS

MANUFACTURING CO.

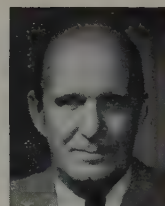
21779 HOOVER ROAD, DETROIT 13, MICH.

Dept. 1

A.I.A. File No. 27-B-1



BEHIND THE BLUEPRINTS



EDWARD D. STONE is a versatile architect with a portfolio of distinguished houses, some of international repute (e.g. the Conger Good-year House). Balancing these residential designs

(p. 94) is an equally competent array of hotels (El Panama, Apr. issue '51), hospitals, schools, even museums (Museum of Modern Art). Affable Ed Stone was born in Arkansas, graduated from the state University, studied architecture at Harvard and MIT, won a hatful of medals since opening his own New York office in 1935.



Tall, blond 37-year-old **HENRY HEBBELN** is a Cornell-trained architect and former Cranbrook Fellow (in regional planning). Hebbeln visited Scandinavia in 1939, was working with Aalto on a lum-

ber town for 10,000 people when the Russo-Finnish war broke out. Back in the U. S., he worked for Gardner Dailey and Antonin Raymond, served in the Marine Corps (1942-'45), then opened his own office in 1946. Though predominantly a custom house designer, (p. 81), Hebbeln is currently planning a merchant builder development and a line of furniture soon to be marketed.



Architect **NORMAN C. NAGLE**, 33, of St. Paul is a Midwesterner by training and experience. A graduate of the University of Michigan and Cranbrook, he worked for the Saarinsens in

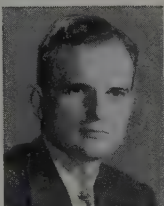
Bloomfield Hills, Mich. and directed Cranbrook's Department of Design. Since 1948, Nagle has combined theory and practice in the twin cities, the latter in his design office, (see p. 90), the former as assistant professor of architecture, University of Minnesota.



Architect **PAUL HAYDEN KIRK** is a true son of the West. Born in Salt Lake City (1914), he moved to Seattle in 1922, graduated from the University of Washington with honors in architecture,

established his own practice in 1939. During the early '40's he was associated with other firms in federal housing work, including community and school planning. From 1944 to 1950 he and James J. Chiarelli were partners in a varied general practice and in 1950 he went into practice for himself again. The hill-side house on page 92 is a solo Kirk job.

Young Bay Area architect **WILLIAM CORLETT** graduated from the University of California (1941) in time to spend a civilian year with the Army Engineers at Pearl Harbor and four more in the Navy on Guam and in Japan. Returning to the Bay Region in 1946, he worked with his father's architect-engineer firm and with school architect John Lyon Reid, opening his own office late in 1950. His own house on a hill, published p. 88, is a product of this most recent period.



A. QUINCY JONES JR., 38, studied architecture at the University of Washington (class of '36), divided the ensuing apprenticeship period among three architects: a year and a half with Douglas Honnold, two years with Burton Schutt, and two years with Paul Williams. He went into the Navy in 1952, did sea duty on the carrier Lexington, became a civilian again after three and a half years. He now has a southern California practice divided between commercial work and house design (p. 100)—luxury and low cost, custom and merchant-built.



HENRY WRIGHT grew up in an architectural family, received his technical training by apprenticeship to his father, famed architect and town planner of the same name, continued his education in other architects' offices. He did research for the John B. Pierce Foundation and Columbia University, and in 1937 he became technical editor of the ARCHITECTURAL FORUM, then managing editor in 1943. Since leaving the FORUM in 1949, he has established a practice as technical and promotional consultant to building materials manufacturers, does product and building design (p. 102).



Architect **KENNETH N. LIND**, 42, comes from Rockford, Ill., was born into a family of three generations of builders. Lind earned his master's degree in architecture from the University of Illinois (1934), won several traveling fellowships that sent him touring through Europe, Mexico, Canada and the U. S. Lind now has an eight-year-old private practice (p. 97) in Los Angeles and a post as design instructor in the University of Southern California's School of Architecture.



Spaciousness when it's needed privacy when it's wanted

Build your homes with greater flexibility, more privacy, new beauty—with FOLDOOR. FOLDOOR is the easy, economical answer to many space-saving problems—a special selling feature for bungalows or bigger homes.

FOLDOOR, a truly improved folding door, serves efficiently as a door closure or a movable wall. Closed, FOLDOOR adds an extra bedroom, a quiet study or a TV retreat, complete with individual privacy.

Open it and again the entire space is available.

FOLDOORS come in all sizes, in lovely harmonizing colors. The frames are rust-resistant steel—strong, rugged, rigid. Vinyl-coated fabrics are durable, washable, fire-resistant.

• • •

Full details and specifications in Sweet's Architectural Catalog. For further information, call your nearby FOLDOOR installing distributor or write to us.

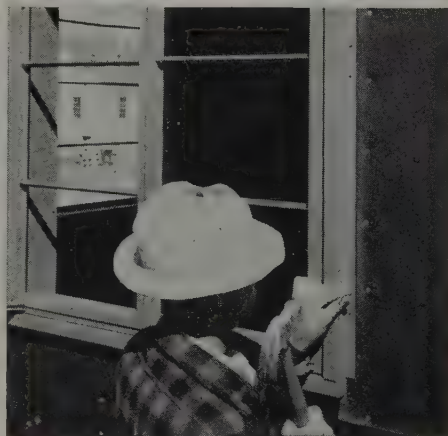
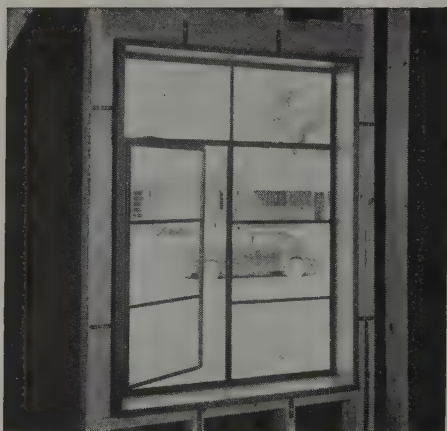
HOLCOMB & HOKE MFG. CO., INC.

1545 Van Buren St., Indianapolis 7, Indiana



THE FOLDING DOOR WITH THE CORNICE ON TOP





INSIDE and OUTSIDE

YOU SAVE BUILDING TIME AND LABOR WITH

Fenestra READY-TRIMMED WINDOW UNITS

Sash, frame, hardware, inside trim, outside trim—all in one modern unit that comes to the site completely assembled for easy handling, quick trouble-free installation! Now all standard sizes of popular Fenestra* Residence Steel Casements are available in this new time and money-saving package.

Goes in Simplest Rough Opening

Sheathing is run over studs and cripples, nailed and cut flush around opening. No need to recess for stops, etc. Same rough opening preparation for frame, brick veneer or stucco.

Quickest, Easiest Installation

Unit is simply plumbed in opening and nailed to sheathing through holes in flashing of trim—no

grounds or special blocking required. No finishing or refitting. No extra trim or stops needed. Plaster or dry wall butts against the metal trim inside. Shingles, siding, stucco or brick butt against it outside.

Helps Sell Houses

Fenestra Steel Casement Units are weather-tight. The windows are graceful and beautiful. They always open easily. They are washed, screened, and storm-sashed from the warm, comfortable *inside* of the house. And they are available Super Hot-Dip Galvanized and Bonderized (on special order), so they never need maintenance painting. Call your Fenestra Representative today. Or write Detroit Steel Products Company, Dept. MB-4, 2251 E. Grand Blvd., Detroit 11, Michigan.

*®

Fenestra READY-TRIMMED STEEL WINDOW UNITS

A complete package • Sash • Frame • Hardware • Inside Trim • Outside Trim

URGENTLY NEEDED: Green light for the building industry

Last year, for the first time ever, dollar volume of the construction industry exceeded the dollar volume of agriculture.

Perhaps that blunt statistic is the simplest way to show the tremendous importance of the building industry to our national prosperity.

In years past construction has always been boom or bust, subject to wilder ups and downs than almost any other part of the economy. Construction booms pushed prosperity to higher and higher peaks. Construction busts dragged depression to lower and lower bottoms.

Ever since the fighting began in Korea ***the government has been trying hard to discourage construction.*** That was no doubt as it should be when all our resources were needed for rearmament.

But now there are increasing signs that before many more months have passed rearmament alone will not be able to keep our economic management running in high gear and that we will run into serious problems of unemployment and deflation unless other elements in the economy can be stepped up.

Perhaps, therefore, it is not too soon to remind the government's economic advisers of one of the most basic facts about our industry:

You cannot revive a depressed building industry overnight.

You cannot start a building boom overnight. And once deflation gets started the problem of stimulating construction becomes many times more difficult. So if America will want the construction industry to play a bigger part in maintaining national prosperity next fall and next year, it would be a very good idea to give construction the green light while there is still time—by relaxing the credit controls which have cut back all types of private construction.

on the next 24 pages

nine HILLSIDE HOUSES

on nine hills in Arkansas, California, Minnesota, New York and Washington

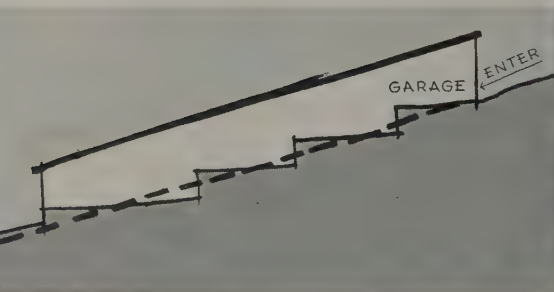
Frank Lloyd Wright has written in his autobiography, "No house should ever be *on* any hill or on anything. It should be *of* the hill, belonging to it, so hill and house could live together each the happier for the other."

Not all the houses in this 24 page collection adhere strictly to this dictum; there are two (*pages 92 and 96*) which seem almost to float free of the slopes they inhabit, rather than remaining part of the land. But all these hill houses do have this much in common: an enthusiasm for their rough, slanting sites, and full realization of their possibilities. There are no grudging design approaches, no attempts to plant conventional houses on the unconventional plots. Instead, each architect used imagination to perch his design on the incline (or dig it in)—and other architects and builders both can learn from all of them. The schematic drawings on this page and the next are a catalogue of ways to put a house on a hillside, and the houses themselves extend the demonstration.

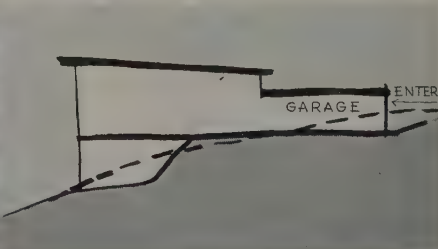
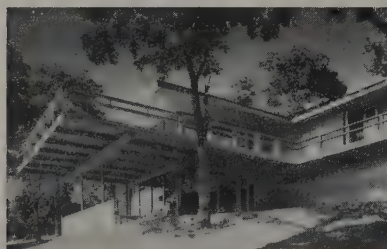
It is an axiom of quantity-builders to steer wisely clear of hilly sites, because in order to build with their usual staccato economical methods they first have to bulldoze the terrain into submissiveness, and that is very expensive in really rough land. But flat sites are increasingly difficult to find; and one of the houses shown here is significantly a builder's house (*page 104*). Another house, an architect's own home, might be of even more interest to developers—on a 45° lot, it cost only \$10 per sq. ft. (*page 92*).

Houses are built on hillsides for a number of good reasons. Primary among them:

The view: The lyrical element in architecture and in living—in house and in home—has no more specific instrumentation than in elevation over (*continued on page 84*)



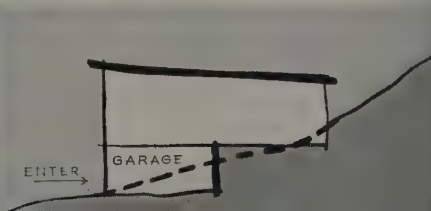
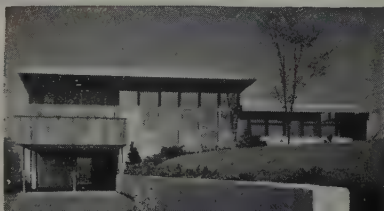
Stepping down the slope is one of the clearest, most natural solutions. See pp. 84 through 89, and p. 106

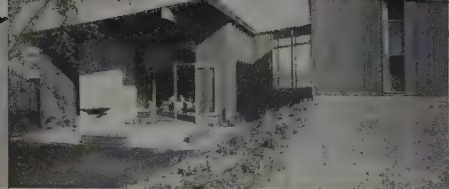
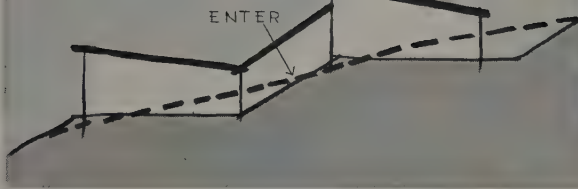


You can **enter on top level** and expand downward, as left and on p. 98

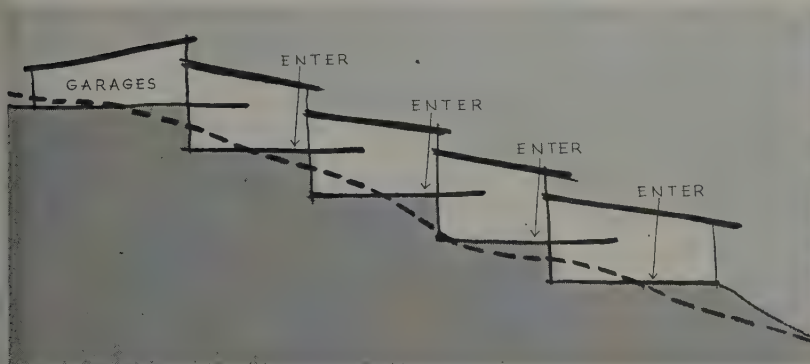
You can **enter on bottom level** and climb the hill indoors.

(House by Architect E. P. Elliott, p. 104, H & H, Mar. '52)

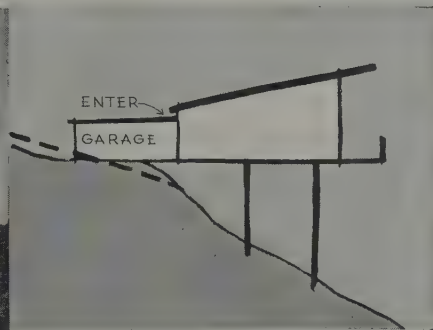




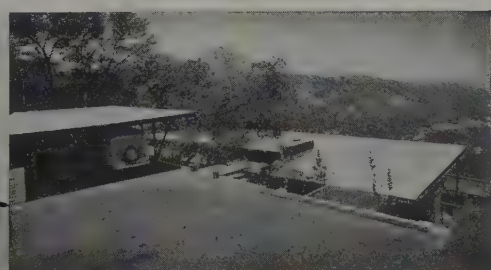
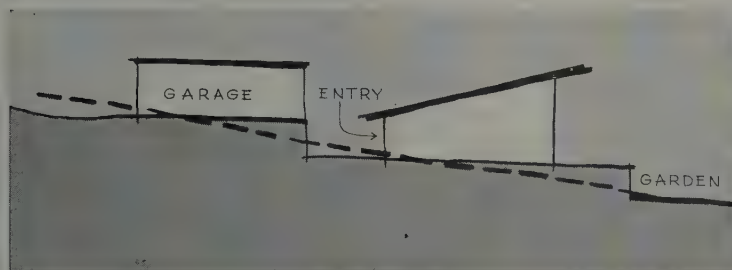
Another solution is building the **house in two units**, then tying them together. See p. 104



Hillsides are highly adaptable for **multiple, intersecting units** as in diagram and on p. 101

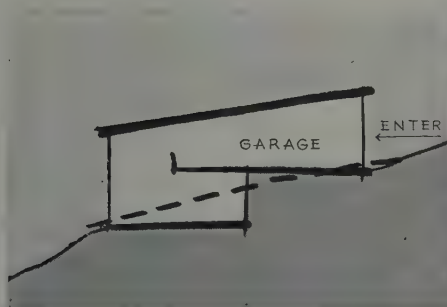


Putting the **house on stilts** is often least expensive way of building on a steep slope. See also pp. 92 and 96



House on shelves cut into slope, with garage on higher shelf. See also p. 90

Mezzanine house uses slope to get dramatic down-hill room. See also p. 94



a vast prospect. Ruskin said: "... skillful architects ... build high." And skillful housebuilders will always build *on high* when they can.

Privacy: Building on a hillside adds the vertical dimension to the space separating each house from its neighbor. Not only is this vertical space more effective than horizontal division in such mechanical insulating functions as noise dissipation, but almost any house on a hillside also gives its inhabitants a strong psychological feeling of aloneness. Hill dwellers have more sky and fewer human beings for neighbors than most of us.

The microclimate: If you live on a hillside in summer, you may actually be twenty degrees cooler than the people below in the valley, so radically does intimate climate vary within broad geographic zones (see "Microclimatology," March issue '47). It is conversely true that in winter the hillside may be colder than the valley—but it is still easier to heat than cool a house.

Location: Many of our cities are in valleys, rimmed with hills, and the only good residential sites which remain on which to build houses convenient to the city are on the hillsides. The hilltops are mostly well occupied by now ... and even if they are not, the cost of land on top the hill is usually twice that on the hillside.

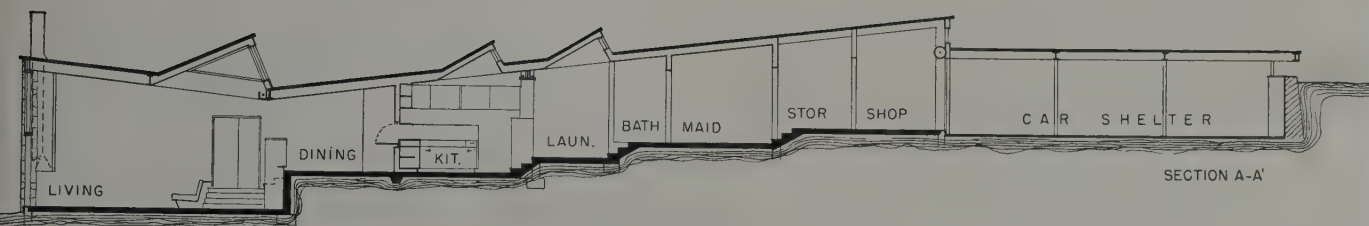
But building on a hillside generally is expensive. An analysis of the houses in our collection indicates that foundations and grading for a hillside house will cost between 15% and 200% more than foundations for a similar house built on the flat. The only way to economize on a steep site is to ignore contours and put the house on stilts, which may either be left exposed (p. 96) or covered with a skirt (p. 92).

The platform style also saves money in other departments besides the foundation, although it generates a few extra expenses of its own. It saves because putting the house up on a raft in the sky cuts down on the usual hillside house's expensive stairways, avoids the many problems of waterproofing the uphill side of a house dug into the earth, and also diminishes the expense of building retaining walls to prevent avalanches or provide protection from rolling boulders. In such a platform house, gardening expenses are also lowered; the house is so obviously an island that the site is usually left wild.

When you build on stilts, however, it is generally necessary to build expensive porches for outdoor living, in order to compensate for losing touch with the ground. Architects have found that labor is also more expensive. Workmen are slower because they prefer not to work on scaffolding, despite the fact that many people do like to live up there in the air.

LOCATION: Sands Point, N. Y.
HENRY HEBBELN, Architect
JAMES ROSE, Landscape Architect
WILLIAM OESTREICHER, General Contractor
CHARLES LANGLEY, Furniture
MARIANNE STRENGELL, Fabrics

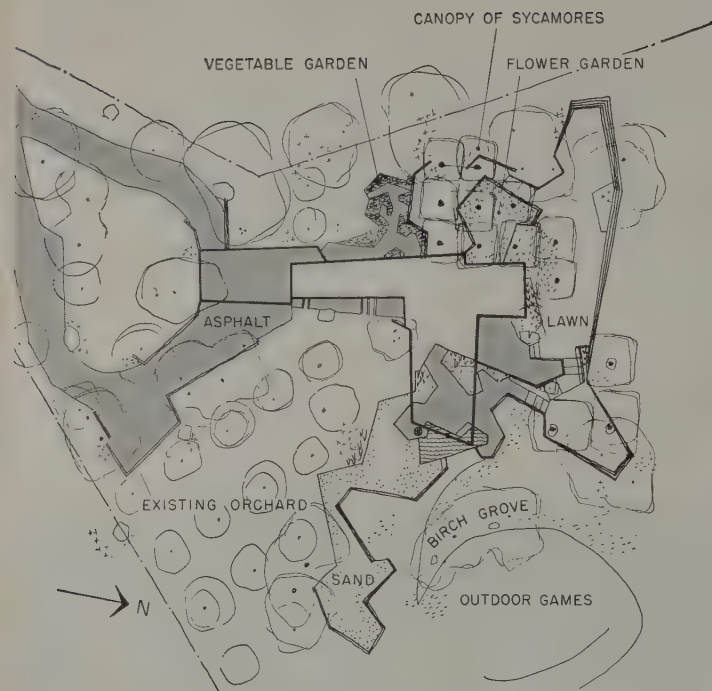




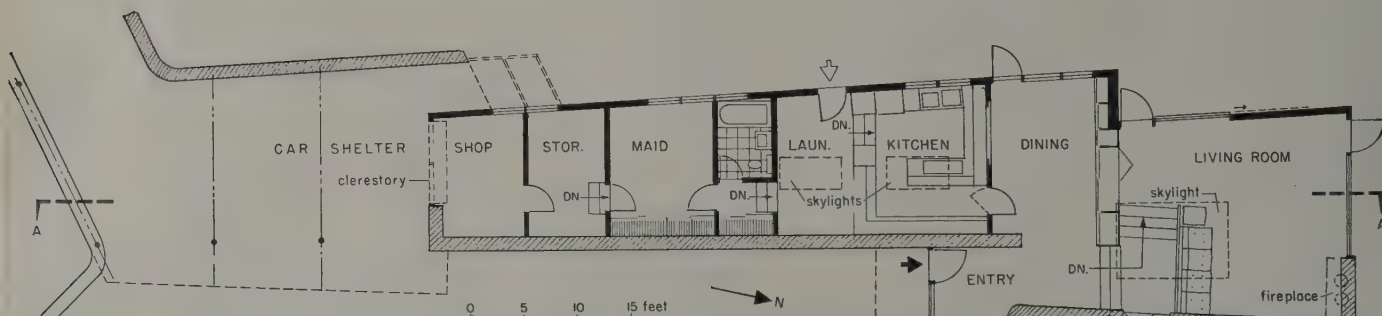
1. On a Long Island hillside: a house dug into the slope

Lionel Freedman





Landscaping is informal, following contours and emphasizing them with alternate strips of sand and sod. Retaining walls are built of railroad ties.



View from east, below. End of children's bedroom is splayed, to receive future addition which is planned to turn back on the natural land contours.

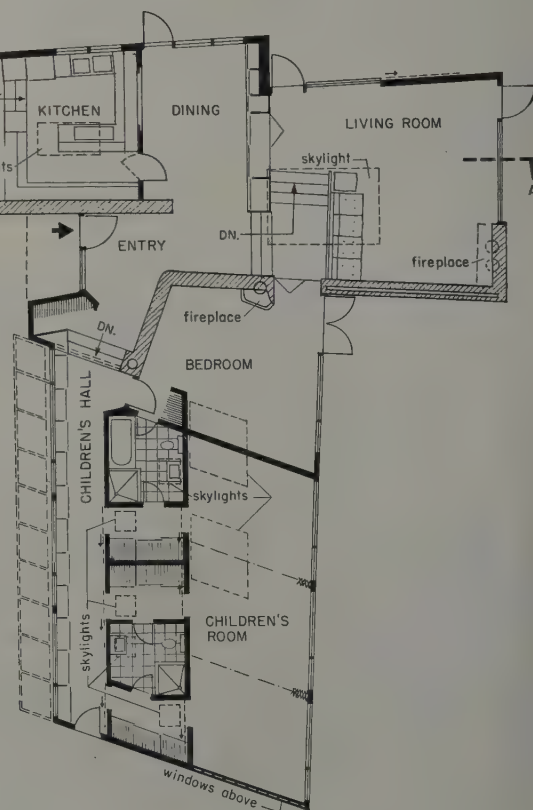
Photos: Lionel Freedman



From off the property this is an invisible house. You have to come up over the top of a hill to get to it, and when you reach the hilltop, the house sprawls below you down the reverse slope, pulled into the earth amid huge boulders, rock outcroppings and handsome trees, viewing northeast and north across an ever changing salt-water marsh and private beach to Long Island Sound.

The cavelike car shelter is at the highest point, and then the house steps down the hill, continuing to dig itself in at each step so that it can have individual outdoor living areas on hillside terraces beside all rooms. Just before the last step down, which is the living room, a bedroom wing angles off to the east and finds itself in the air, abandoned by the slope, supported by pipe columns. Underneath is a covered play area for the three children of the family.

The roof of the long downhill wing slants with the hillside until it reaches the living room, where it then reverses pitch to stretch the glass north wall two stories high, giving full scale to the Sound view and letting the dining balcony share it too. The living room walls also are splayed subtly outward to complete this expansion toward the view.

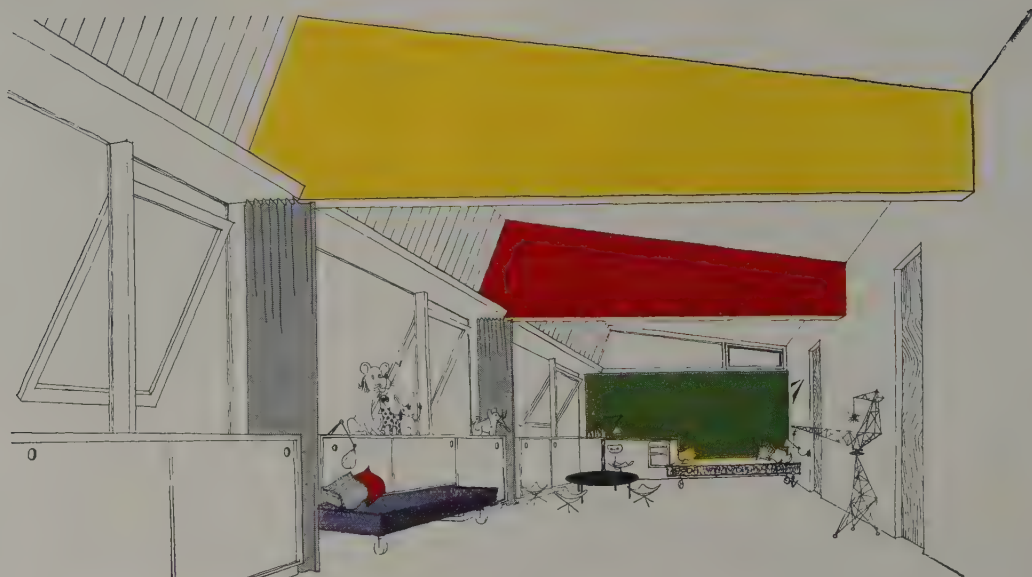




Above and below are opposite views of the living room: above, from near glass north wall; below, from dining balcony. Most of the furniture and lighting is built in. Mobile is by Alexander Calder.



Indoors and out this house preserves an extraordinary affinity for its land, trees and boulders. The masonry walls are local sand-bank boulders, indigenous and multihued; the cypress siding is naturally weathered to harmonize with the native oaks; even the gravel on the built-up roof is reminiscent of the sand of the beach—especially when you see both from uphill. Numerous skylights and plastic domes admit natural light on the native materials, and complete the identity of inside and outside.



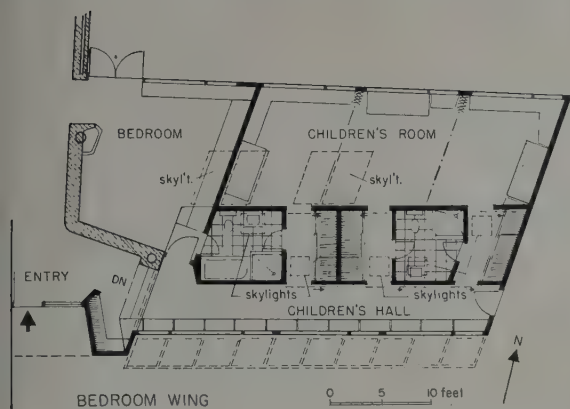
Photos: Lionel Freedman



Kitchen, below, looking toward dining room. Note pass-through counter. Maid's room is behind camera in this photograph.

Dining room has companion terrace outdoors, and also overlooks living room. Reversal of roof pitch saves the living room's vista of Long Island Sound for diners to share.



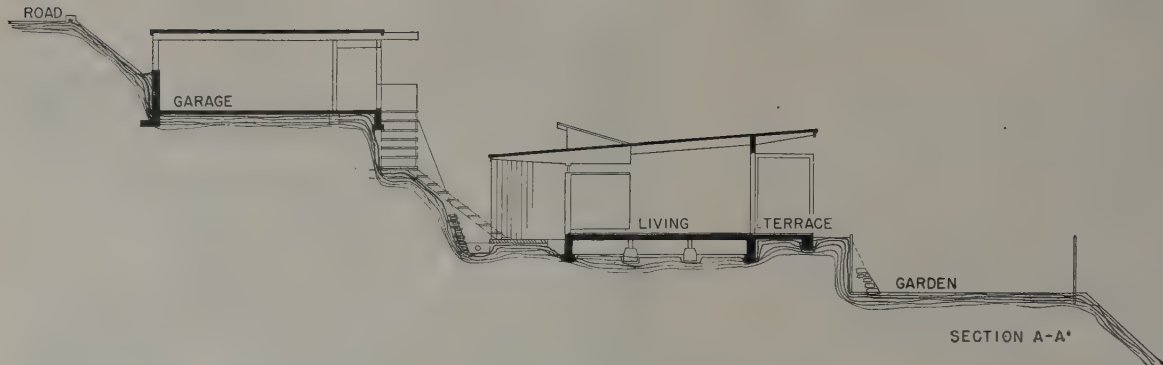


Children's bedroom wing (plan, above, and drawing, left) is partitioned within by accordion walls, and can become single big playroom. Each child has own dressing room, skylit. Cabinet-lined hall to south is also used as greenhouse, and will lead to a wing to be added in the future.



Master bedroom is temporary, will eventually be used as study when new wing is added to house. Its terrace is screened from children's play area by an 8-ft. retaining wall. Interior door leads to living room.





2. On a Los Angeles hillside: **three-level house**

Photos: Julius Shulman



Approach on upper terrace, above. One of the problems in this kind of house is building a good looking roof. These designers did it by using white stone on the built-up base, with a neat aluminum gravel stop all around the perimeter.

Here the top level is a garage: You get out of your car, walk down a flight of outdoor stairs to the house itself, which is built on a shallow in-line plan, and then you walk down one more level to the garden.

There are distinct advantages to terracing a slope this way in repeated, slim shelves: 1) the cut earth can be used for fill; 2) complete privacy on the level of the house can be had from both above and below by manipulating the depth of the three shelves, as these designers did. From above, all that is seen is the roof of the house. From below, only the garden wall is in sight . . . and because this garden wall is lower than the house itself, it does not block the far view.

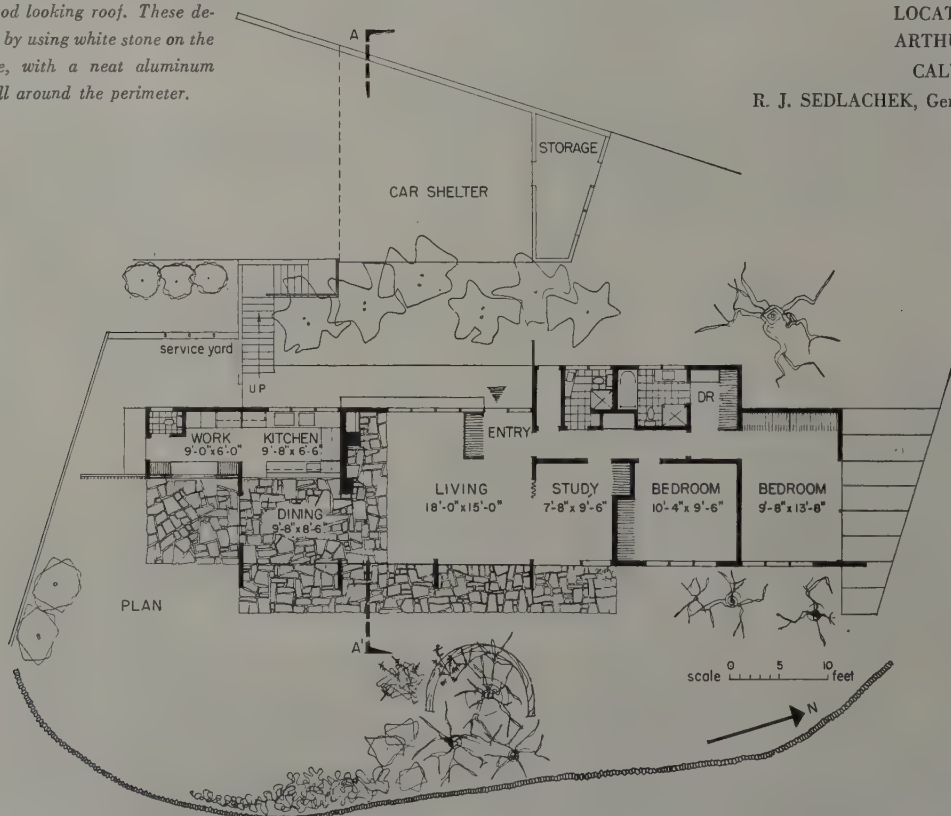
Total cost of the house was about \$22,500, including terraces, carport, and exterior roofed areas (house proper is 1,469 sq. ft.; porch area totals 254 sq. ft.; garage and storeroom are 624 sq. ft.). If the house had been set on flat ground, architects estimate the saving would have been only about \$650. Construction is conventional slab and wood frame anyway.

LOCATION: Sherman Oaks, Calif.

ARTHUR B. GALLION, Architect

CALVIN C. STRAUB, Designer

R. J. SEDLACHEK, General Contractor and Owner



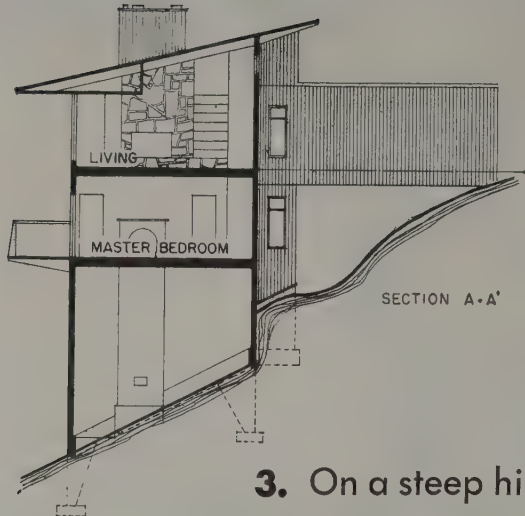


Hinged glass walls open living room, dining room and study almost totally to view, and can be angled as wind-breaks too. The iron-stemmed furniture lives equally well indoors or out. Garden, below, is a close-up version of the verdant panorama beyond.



No retaining wall was necessary to hold uphill side of house shelf. The firm shale surface also makes a cool wall for the outdoor hallway.





LOCATION: Berkeley, Calif.
 WILLIAM CORLETT, Architect
 ALFRED HIRSHFIELD, General Contractor
 WALTER STEILBERG, Engineering Consultant
 O. M. SIMONSON, Mechanical Engineer

3. On a steep hillside in Berkeley, Calif.: how to use a useless lot

Photography Inc.



East elevation, above; west, below. Exterior finish is redwood T&G. Bridge, above right, to mainland doubles as carport.

Rondal Partridge



The real estate man sold architect William Corlett this 60' x 200' lot for \$1,000 in 1919, although other lots of the same size in the same neighborhood were going for \$3,000 and higher. Because this one is on a 45° slope, it was considered hopeless.

Corlett knew better; he not only built the neighborhood's (and this collection's) most dramatic hillside house, but he did it for \$10 per sq. ft. (2,014 sq. ft.).

Anything but a platform house was out of the question because whatever was designed would be three full stories from foundation up to street level. Corlett put down nine 1' sq. reinforced concrete piers 7' deep for the foundation, tied the piers together with grade beams (attempting no restraint on shifty surface soil in rainy seasons) and set a wood frame house on the lean legs. Foundation costs came to about 11% of total construction. Other economies: ½" foundation grade plywood in 4' x 8' sheets for walls and rough flooring (instead of 1" x 8" diagonal sheathing) and crystal sheet glass (instead of plate). The only extravagance: imagination, and the view it earned.





Spectacular view from spacious porch and balcony is over city to bay, including Golden Gate Bridge and Marin Hills.

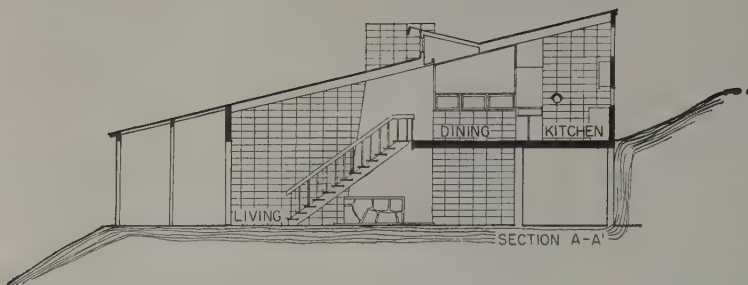
Photos: Rondal Partridge

Shed roof bows toward the sun in order to cut sky glare and cast shade on the glass wall of the living room. Photo above left is from the road; below, from south.



Living room ceiling is 2" T&G white fir sheathing left exposed. Stair down to bedrooms is visible at right in photo.





4. On a Minnesota hillside: a mezzanine house

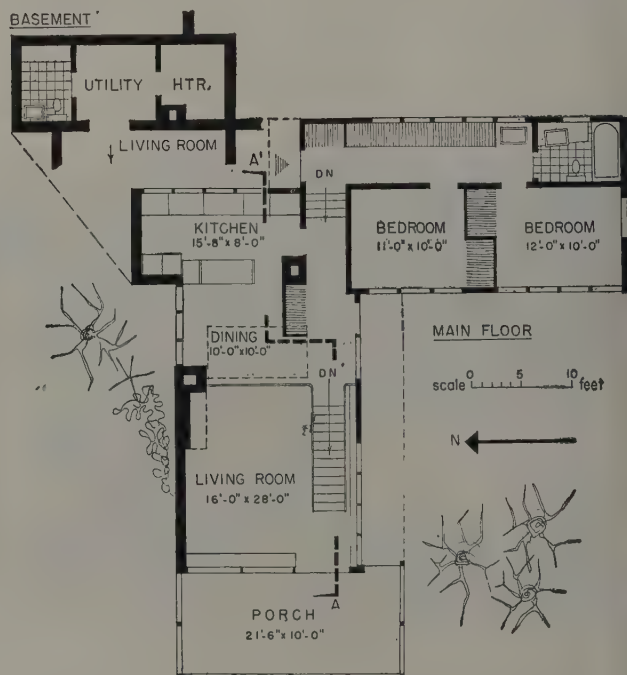
LOCATION: St. Paul, Minn.
 NORMAN C. NAGLE, Architect
 JAMES STEELE, General Contractor

Living room extension under dining platform is used as television alcove, or as extra bedroom for occasional guest. Curtain run on track along edge of mezzanine keeps it private.

This is the customary way to notch a house into a hillside, but here it is done unusually well. The roof pitch parallels the one-in-four slope of the terrain, but is adroitly kept high enough to accommodate a dining mezzanine with extra living room space tucked in under it, and a luxuriously high ceiling.

The house cost approximately \$17,000 (\$11.20 per sq. ft.). The architect estimates this was 3-5% more than a similar flat slab house on grade. But again, this hillside site paid its way: land was bought for \$1,500, but would have been \$2,500 on top of the hill. Putting this house on stilts would have reduced the cost only about 2.7%, because of the extra insulation and larger heating plant which would have been required in this northern climate.

A lightweight concrete block was used for all masonry work, because of its low cost, high insulating value (especially below grade) and ease of handling. It was laid up in a checkerboard pattern so that the resulting continuous vertical voids could easily be filled with an aggregate to complete the insulating job. Pencil reinforcing rods run horizontal every other course. The wall was painted inside and out with a cement paint to provide a vapor barrier; where the walls reached below grade, a rubber membrane waterproofing was applied.





Photos: Photography Inc.

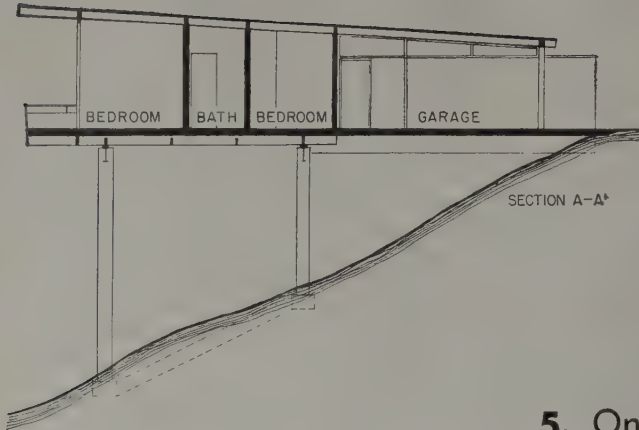
Lot is 69' wide and 150' down hill, and the local building restrictions demanded side yards, so this solution on the slant was virtually the only one possible. Above is a view of the house from northeast.



Dining room, below. Pass-through from kitchen is also used as counter for early meals of the young children. Drawers under this counter for silver storage slide in either direction—into the kitchen or into the dining room.

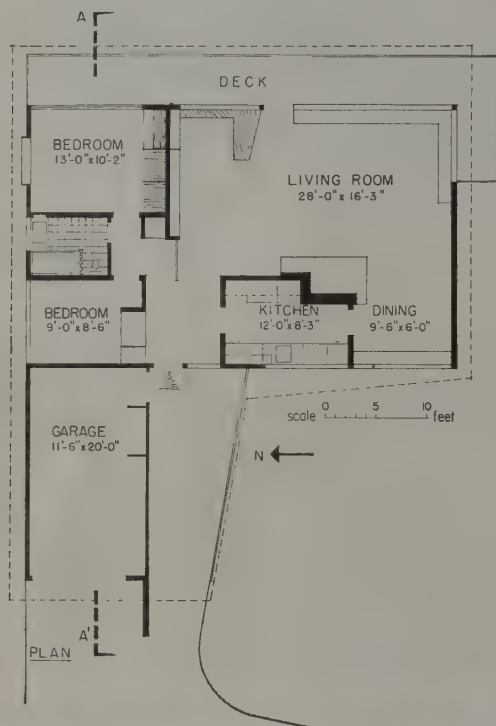


Down hill is also west, so roof slope was continued over porch to shield living room from late afternoon sun glare. The line of low windows near the porch admits earlier south sun to the living room.



LOCATION: Seattle, Wash.
PAUL HAYDEN KIRK,
JAMES CHIARELLI, Architects
PHILIP CEIS, General Contractor

5. On an edge of Seattle: a house in the air



This town house for a secure bachelor (who is the head of the sociology department at the nearby University of Washington) has a sense of floating in the air. Actually six reinforced concrete piers moor it firmly into the hill, and are fitted with brackets to support a rental apartment to be added in the future.

The house is short on space and services because the owner needs little. When he wants to walk around on Mother Earth, he can go to his farm in the country. But when he wants to sit and look out over a long, wide view, his porch here is hard to surpass.

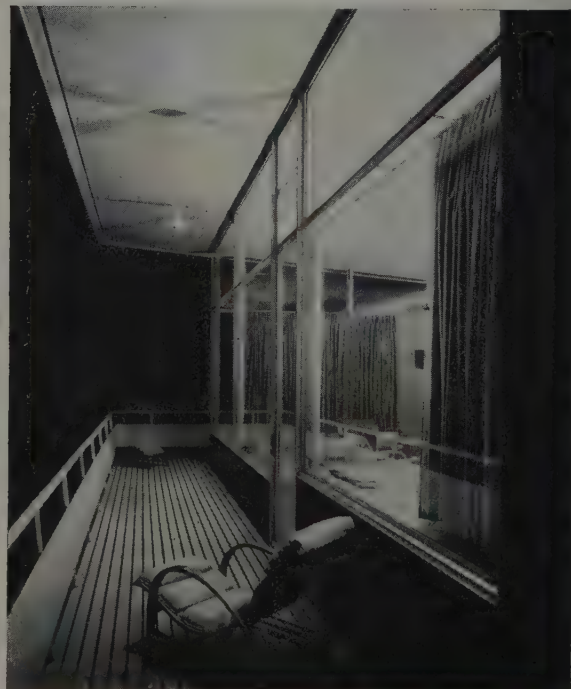
This lot in a \$4,000 neighborhood was acquired for \$1,500 because it was so steep, and was considered to be prohibitively expensive to build on. That was true; the foundation cost \$2,500 more than the normal cost of foundations for a house this size on flat land (total foundation expenditure was \$3,500). But the additional cost for foundations was absorbed in the saving on the purchase of the lot. Construction cost for the entire house was \$20,900, incl. architects' fee, or about \$16 per sq. ft.

Porch at night is a flying bridge into the darkness. Oriented east, it also is a very pleasant porch in the morning sun.

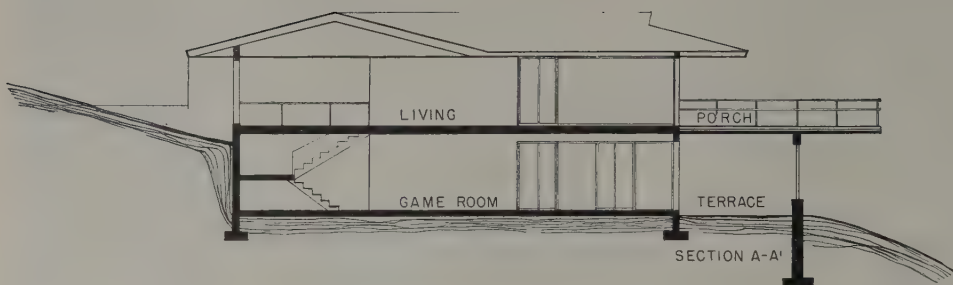
Photos: Dearborn-Massar



Placid facade of house as seen from street, above, gives little clue to its exciting structure. Bridge serves also as garage.







LOCATION: Fayetteville, Ark.

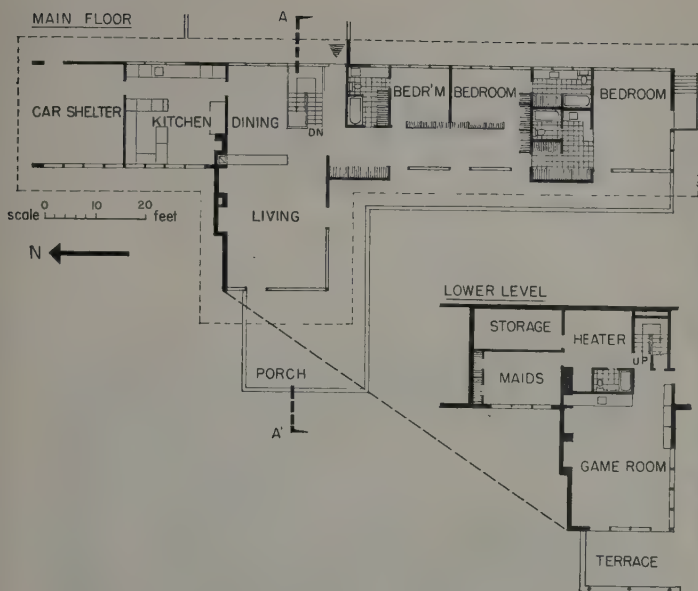
EDWARD D. STONE—KARL J. HOLZINGER JR., Associate

6. On an Arkansas hillside: a spacious timber porch shadows the slope

From southwest, view of informal down hill facade

Photos: Lionel Freedman





Garage, above, is simple public face of this large house. In plans, left, note size of kitchen, which was designed to be sitting room as well, with a fireplace and indoor barbecue. Dumbwaiter connects with play-room on floor below.



Living room, left, opens on wide porch which is suspended over the hillside below. Wide overhangs over glass walls of the living room intercept summer sun.

This is an opportunistic downhill house, whose designers preserved the contours of its site and used them to build size without formality. Because of the land drop they were able to construct an exceptionally unobtrusive two-story house, which doesn't put up much front, but has a lot of back.

From uphill, the house has a lean low brick facade which belies the actual size of the structure; from below, the true bulk is apparent, where the house opens up and reveals its spacious, comfortable character.

The key to this relaxed informality is the great raft of a porch which is suspended out over the grass and terrace below. Much more than a minimal balcony, this is a real duplication outdoors of the adjacent living room.

The foundations which hold this rangy structure are concrete block, with brick veneer on stud walls above. There was virtually no site work.

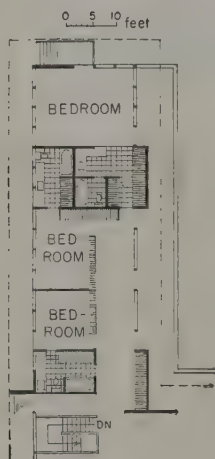




Bedrooms for two children are directly off wide gallery. To obtain through ventilation during hot Arkansas summers, architect designed screen partitions which can be rolled up leaving only low cabinets between gallery and these bedrooms. Left, one of the children's bedrooms. Below, view down gallery.



Left, plan of children's bedrooms and gallery. Below, view out on the great porch from the narrower balcony which extends to the east end of the house.





7. On a Pacific hillside: leapfrog apartments

LOCATION: Los Angeles

KENNETH N. LIND, Architect

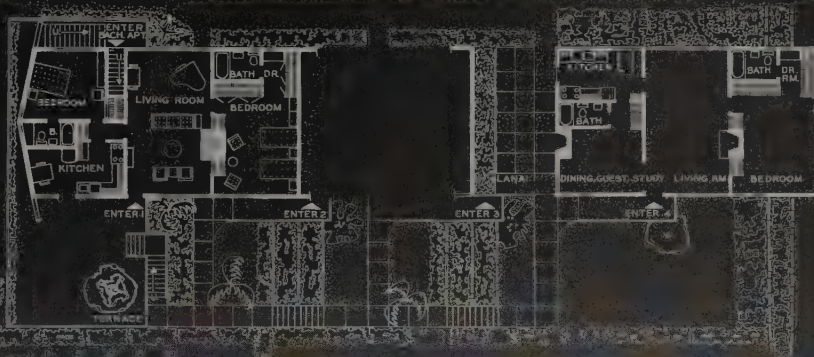
C. HENNING VAGTBORG, Contractor

Architect Kenneth N. Lind's Sunset apartments (see cover) are something of a tour de force in diagonal architecture. He has taken what is essentially a five-story block and eased the floors onto shelves in the slope to form a hillside parallelogram. The results of the maneuver:

Five apartments under one, continuous roof; extra high living rooms; direct, outdoor entrances (except for the top studio apartment); multiple use of plumbing stacks and fireplace chimneys.

The plan capitalizes on the parallel slopes of hill and roof. Each apartment gains three ceiling heights: a medium pitch in the bedroom, lofty for the living room, low and flat for kitchen and study. Such a roof

Photos: Julius Shulman

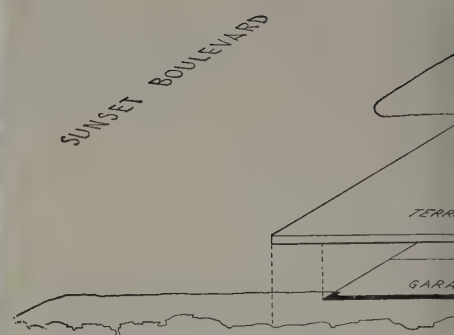


The plan capitalizes on the parallel slopes of hill and roof. Each apartment gains three ceiling heights: a medium pitch for sleeping, lofty for the living room, low and flat for kitchen and study. Such a roof has several advantages (economy among them) but it tends to look as if it were on the verge of a landslide. Lind visually counters this by hooking his building in at the hilltop with a reverse diagonal. Partitions every 15' carry the whopping 135' ridge pole.

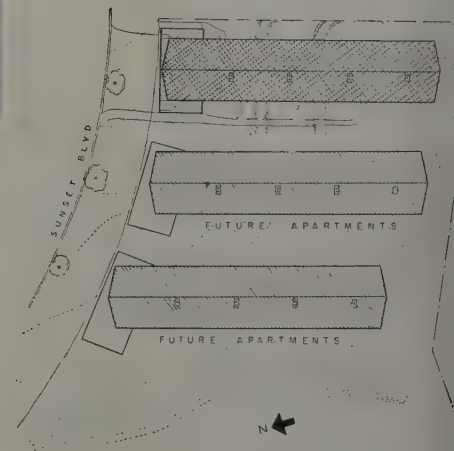




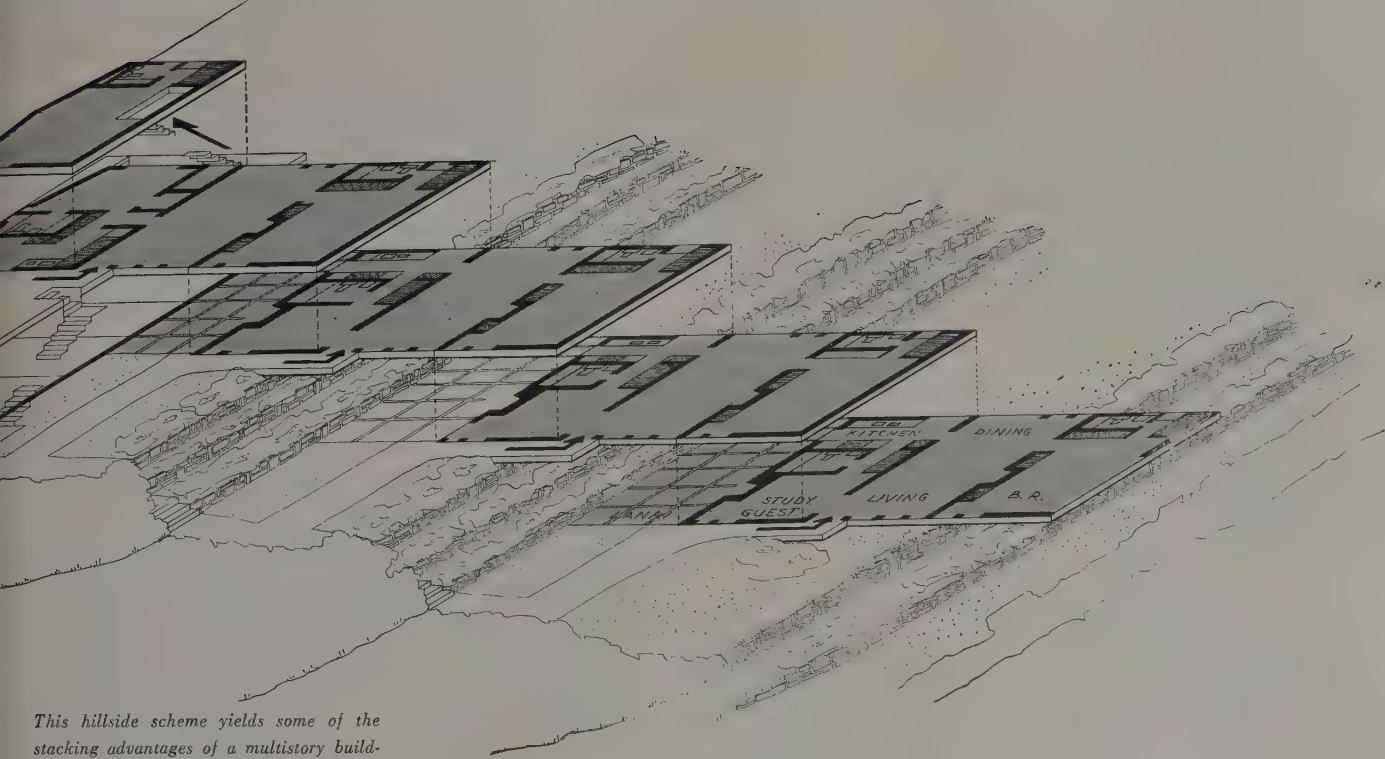
roof has several advantages (economy among them: Lind estimates a flat roof would have cost \$2,070 more) but tends to look as if it were on the verge of a landslide. Lind counters this visually by hooking his building in at the hilltop with a reverse diagonal. Partitions every 15' carry the whopping 135' ridge pole. Lind's design combines and resolves as many elements as a club sandwich. His main problem: to build on a limited budget apartments which would yield high rentals. The first house—there are three of them—was completed last fall and cost just under \$49,000 (exclusive of architect's fee, furnishings and landscaping) and brings in about \$1,100 in rentals per month. Tenants get a good deal for the money. All five apartments are exceptionally livable, have double-height living rooms. Four have outdoor living in the form of lanais or glass-screened decks, as well as two fireplaces, two bathrooms. Radiant heating coils are imbedded in 1½" of concrete laid on wood subfloors. Also, carpeting, curtains, ample built-in-storage and garages are provided. Of course the clincher is the fabulous vista of the Pacific and the Los Angeles hills which enters all rooms but the kitchen. Each house slopes downward lengthwise and the three houses are also stepped above one another in parallel. This gives every apartment good sight lines over the others.



Each apartment is entered from a ramp (left) level with its living room. There are no indoor stairs. Garages are at top of the hill.



A driveway wide enough for guest parking follows the curve of adjacent Sunset Boulevard. In order to face the garages on the drive, Lind pivoted them as needed. The houses step down on natural contours wherever possible. At two points Lind bridges a 1' in 2' drop instead of cutting back the hill (see section). Looking uphill (above), the lowest apartment is at right. For economy, houses are conventional wood frame and stucco.



This hillside scheme yields some of the stacking advantages of a multistory building while minimizing problems of vertical circulation. All but the top apartment are reached directly from outdoors. Top apartment has an inside stair going through the garage and over the first apartment. Most kitchens share a plumbing stack with two bathrooms. Garden and living room fireplaces of succeeding apartments have a joint chimney.

The houses are angled to obtain a view of both hills and water, to avoid ocean glare and sharp winds. Sliding glass doors in the garden room (right) form an auxiliary windbreak. 2" x 6" roof sheathing becomes the ceiling in the living room (below). 4' eaves keep rain streaks off of the windows.





8. On a Palo Alto slope: a dramatic split-level builder's house

LOCATION: Palo Alto, Calif.
A. QUINCY JONES JR., Architect
EICHLER HOMES INC., Builder



The link: stairway between bedroom block and living room block cost operative builder about \$115. When it was sent out for bids as a single house by individual contractor, this stair was estimated at \$150, providing an interesting index to the economy effected by repetitive building.

This advanced design was produced as a builder's house—a relatively high priced one for California at \$23,500, but one which indicates operative builders can use rolling land well. It splits the bedrooms and the living area into two separate wings, in a miniature version of many lavish custom-built houses.

Grading costs for this land ran between \$150 and \$200 per lot (80' x 110') but this would have been nearer \$300 for a single house site bulldozed separately. Costs on the houses totaled \$14.30 per sq. ft., including a \$3,000 lot, contractor's profit and architect's fee. A similar house built on level ground in the same development showed little discernible saving in construction cost, but the link between the two wings has added value as an extra small room.

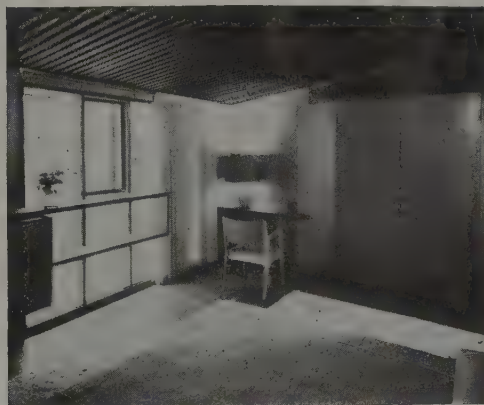
Both wings of this "binuclear" house sit on 4" concrete slabs, membrane waterproofed, containing radiant heating coils. Foundation costs ran about 6% of total. Builder Eichler also sold four-bedroom variations of the same plan, priced at \$25,000.





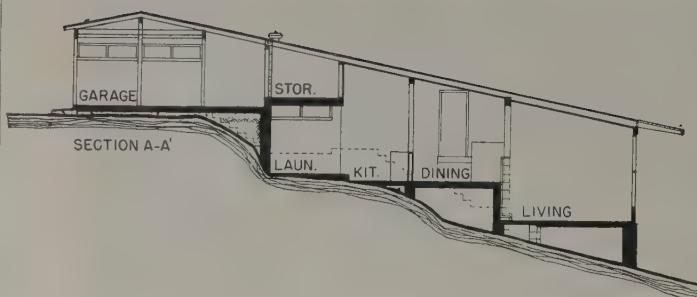
Looking down into living room, above, and looking from inside out, below. Roof is made of 2 x 2's and 2 x 3's laid on edge and nailed together in 2' wide panels. This laminated structure spans from 12-16' without intermediate supports and is used as ceiling finish inside. Window areas are cut up by frequent mullions, permitting substitution of 3/16" double strength glass for more expensive 1/4" plate.

Photos: Rondal Partridge



Bedroom, above, shows corrugated ceiling finish. Other wood walls are mahogany plywood. Most of glass is fixed, with some steel sash set in.

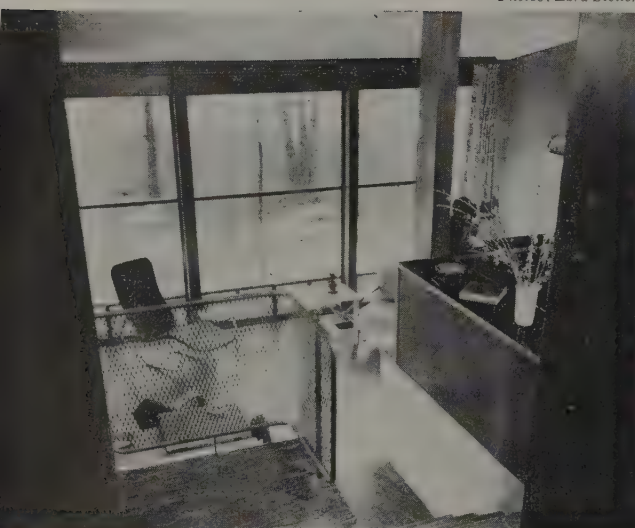




LOCATION: Rye, N. Y.
HENRY WRIGHT, Designer
WOODLE CONSTRUCTION & SUPPLY CO.,
General Contractor

9. On a steep rock in Rye, N.Y.: a seven-level house

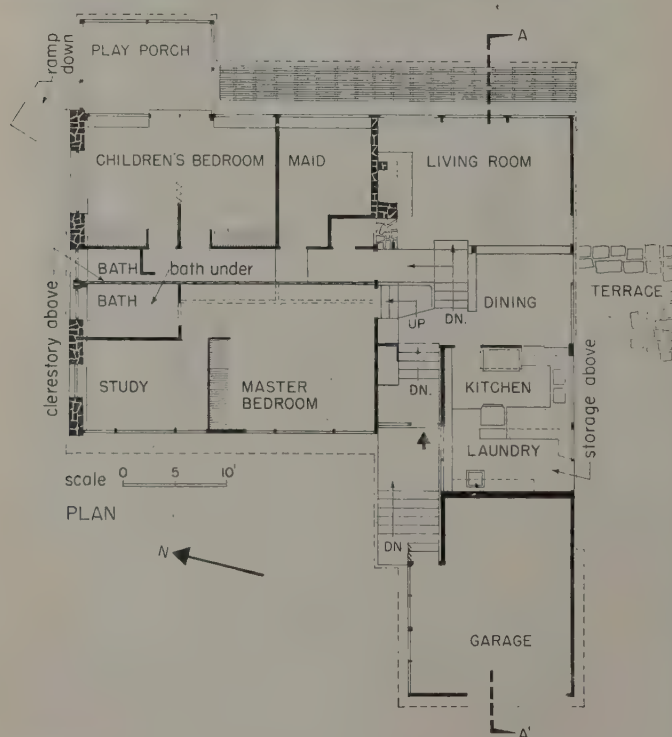
Photos: Ezra Stoller



There were no excavations and no footings for this house. The only site work was a dynamite charge which blasted a flat shelf (for the kitchen and laundry) into the bare boulder which the whole building rides. All the structural walls bear directly on this rock, and on the steeper angles they are doweled to prevent sliding. A precise engineer's survey of the big outcropping dictated the design, and the hard contours were so well respected that at one point the finished floor of a ramp within the house is actually only 1" above the stone surface.

The house was built in this precise, difficult way in order to leave the flat lower end of the plot clear for gardening—an obvious impossibility on the sloping rock. At \$17.50 per sq. ft. (a total of approximately \$35,000), this hillside house was about \$2.50 per sq. ft. more expensive than an otherwise similar two-story house on flat ground by the same designer.

Left, looking down into the living room on the lowest level; below, a transverse view showing the only two-story section of the house. (Another bathroom is directly below the one at the end of the higher hall.)



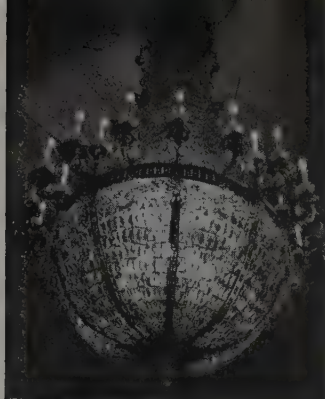


REMODELING JOB AT 1600 PENNSYLVANIA AVENUE

Abbie Rowe—Nat'l. Park Service



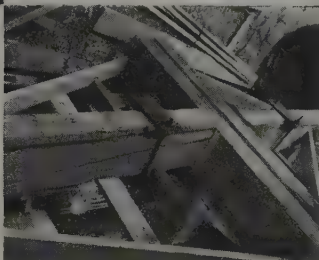
*For two years White House and grounds were a litter
of trucks and trash chutes, sheds and scaffolding.
Sidewalk supers peered through the iron fence;
leaseholder Truman paid frequent visits.
His famous South Portico balcony (center) was left intact.*



Dmitri Kessel

*Indications of impending disaster:
massive chandelier danced and tinkled with the crowds
as heavy (70 psf) East Room ceiling sagged 6".*

Abbie Rowe—Natl. Park Service



*... and ancient floor timbers cracked
under the weight of Margaret Truman's grand piano.
Iron tie clamps were a temporary expedient.*

THE new White House is a mere shell of its former self. In fact, after $2\frac{1}{3}$ years and \$5,761,000 of the public's appropriated cash, a thick exterior shell of Virginia sandstone is all that remains of the original Home of the Presidents, erected 1792. Inside and underneath, the rejuvenated building has the new steel and concrete bones of a skyscraper, the mechanical heart of a super-hotel and the conveniences of a Home of the Future. In interior cubage, it is half again as big as it was before.

But, to the flood of curious visitors the recent reopening has unleashed, the old place looks pretty much the same, with a new coat of paint outside and a certain sparkle inside that wasn't there before. This is as the planners intended it. The ground and first floor public rooms so familiar to millions of Americans were meticulously taken apart, spruced up and replaced, with the subtle substitution here and there of new flooring, new and reupholstered furniture and hangings.

But what, the taxpayer might ask, happened to that six million bucks?

First of all, a good portion of it is hidden in places where the Secret Service frowns on sightseers: behind the woodwork in the form of steel beams, ducts and conduits; in the second and third floor living quarters as new bathrooms, bedrooms, closets; and under ground level—much of the new White House, like an iceberg, is below the surface, underfoot and out of sight. There are two brand new basements and a mechanical area where there was virtually nothing before, housing large-scale storage, service shops, air conditioning, heating, incineration, electrical and water systems. (See p. 113.)

There was ample reason for renovation. The Executive Mansion was a shaky old firetrap, scarred and weakened by 157 years of use and abuse, standing more from pride and habit than any valid structural cause. In recent years more than one President had heard the eerie night sounds of old timbers grunting and groaning. President Truman reported an "over-the-waves" sensation when he walked across his second floor study, and crowds noticed the crystal chandeliers swaying and dancing ominously at large receptions. Every time the Marine color guard changed, the floors vibrated.

One day in early 1948 Margaret's piano settled slightly over

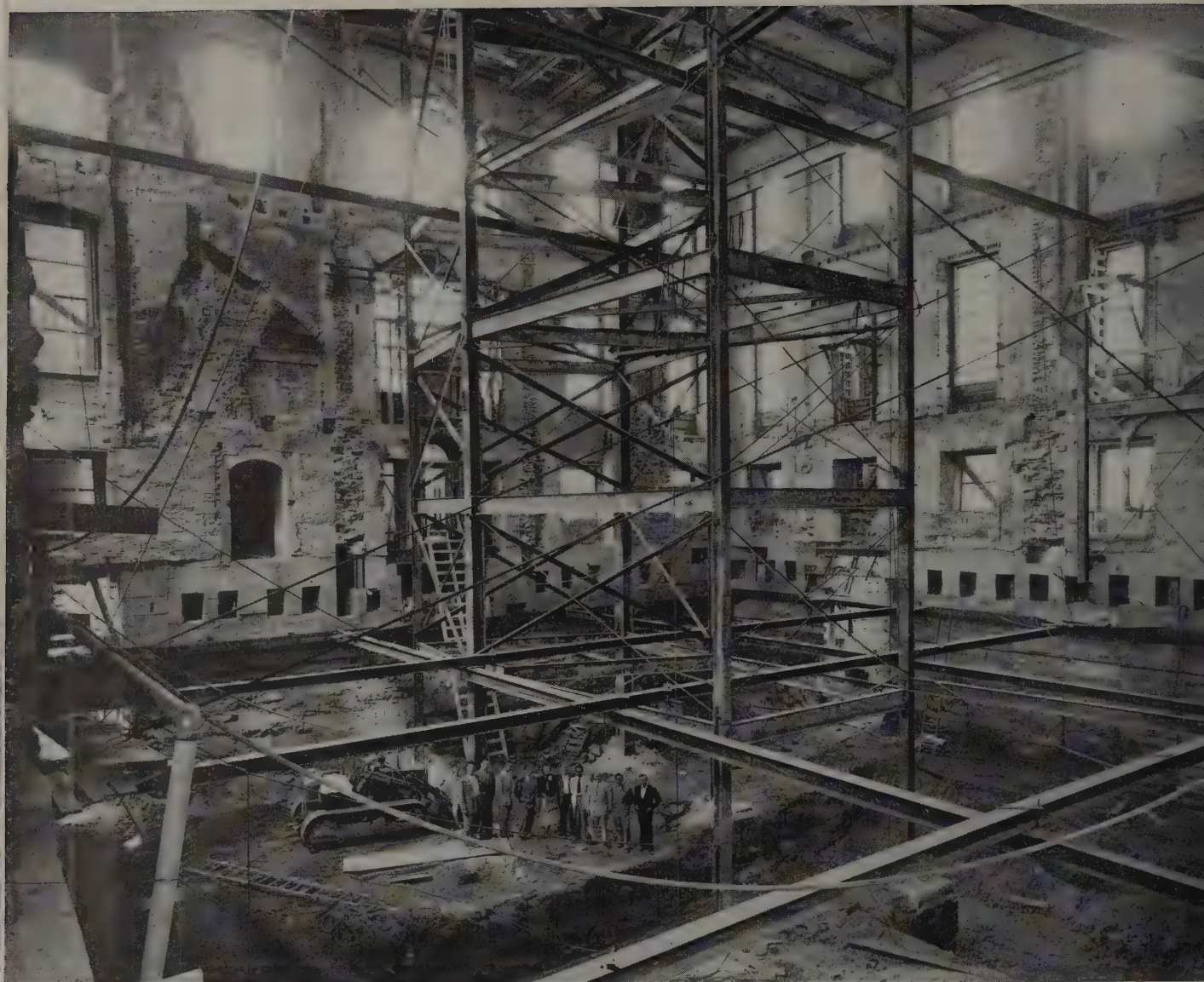
cracking floor timbers, and the East Room ceiling deposited a small pile of plaster dust on the floor. HST's bathtub—directly above one of the reception rooms—was discovered to be sinking slowly into the floor. The President said he "shocked the madam" by suggesting what a scene would have ensued had he come tumbling through the ceiling, wearing nothing but a bathtub, while she was entertaining the Daughters of the American Revolution at tea.

Contrary to rumor, neither the piano nor the tub changed floors abruptly. But Mr. Truman, a 33rd degree Mason who numbers among his hobbies the crafts of architecture and building, began to detect more and more structural faults and in January 1948 asked a committee of architects and engineers to take a careful look. Theirs and subsequent findings:

The original construction was good. For example, 18th Century craftsmen had laid the big sandstone blocks of the outside walls with joints of only $1/16$ " masonry that would be hard to duplicate today. But after a century and a half of tampering, the whole building was dangerously overloaded and as shot through with holes as a Swiss cheese. Almost every President since Adams had been enthusiastically "improving," punching doors here and there with abandon, boring holes in floor beams, studs and brickwork for pipes and wires, blithely dropping in heavy concrete and tile bathrooms at random on the old floor joists without regard to the structure.

Very nearly the last straw was a weighty steel-truss and tile roof put on in 1927 by Coolidge. In the original design, the top floor had been suspended from the wooden trusses that held up the roof, and these trusses in turn rested on the outer stone walls, which had adequate foundations to carry the load. In the Coolidge renovation a new third floor was put in, built on new beams and trusses of steel. These changes should have added up to greater permanence and strength, **but for one almost fatal error:** some of the trusses were footed on brick interior walls whose foundations were barely strong enough to support their own weight. Nothing gave way at the time, but with the tremendous load pressing down on them, the interior walls started to settle and a destructive load was thrown onto the crumbling central piers.

A 90-ton weight rested directly on one interior brick partition which was only nine inches wide at second floor level, was



Abbie Rowe—Courtesy National Park Service

never intended to be load bearing, and was grounded without any spread footings on 20' of highly compressible pulpy clay soil. The exterior walls carried much less weight and rested solidly on 8' spread footings, settling very little over the years.

In short, the middle of the house was dropping out through their unexpected burdens, cracking apart and pulling away from the more stationary outside walls. When workmen began stripping away plaster late in 1948 they found gaps of 3" to 5" between inner and outer walls. Engineers looking over their shoulders said the slightest earth tremor would have sent the whole building crashing down like a house of cards.

Added to innumerable and unwise structural changes, the functions of the White House had multiplied far beyond the architect's original concept. Human traffic steadily increased: as the country's population doubled and trebled, the trickle of visitors to the capitol became a freshet and then a flood, and most of them went through the Mansion during visitors' hours. By the turn of the century, floors were creaking under state

Cavernous interior, here being inspected by a Commission group, resulted from gutting of ground, first and second floors.

Steel posts and shoring held up third floor and roof while bulldozers scooped out two new basement levels.

Interior partition tiles (right), being laid up between new supports in ground floor hall.

These posts and beams, of steel encased in concrete fireproofing, are typical of new inner structure, an independent, load-bearing frame extending five floors from bottom basement to underside of old top story.

receptions of a thousand and more persons, and it became routine procedure to put extra props under the East Room, State Dining Room and Main Hall during those occasions. On Franklin Roosevelt's inauguration day, there was an average of 3,600 well-wishers in the building all day.

Proper ventilation at these peaks was becoming more and more of a problem; even portable air conditioning units failed to relieve the stifling atmosphere inside. The number of sightseers wasn't diminishing either: in the 11 months prior to the 1948 structural survey, no fewer than 440,000 visitors trooped through the main floors during the two-hour daily visiting period. Designed as a residence, the White House was trying to stand up under the traffic of a railroad terminal.

By September 1948 it was obvious that the combustible second floor was not the only trouble. Inspection holes cut into the floors, walls and ceilings during the \$50,000 survey showed that first estimates (around \$1,000,000) were sorrowfully low, exhumed long-buried mistakes that boosted the probable renovation sum to \$5,400,000.

When this stunning figure was released, the shaky old House was all but overcome by an avalanche of mail and highly vocal opinions. People were in an indignant tizzy; no one had realized that such difficulties could have been suddenly discovered in the famous White House. Some wanted to tear it down completely and build a new and different one from scratch; others suggested preserving it as a museum and offices only and moving the Presidential family to a suburban White House up the Potomac, something that would serve the President as Chequers (with offices at 10 Downing Street) serves the British Prime Ministers.

Early in 1949 Congress passed Public Law No. 40 creating a bipartisan Commission on Renovation of the Executive Mansion. Chosen were Senators McKellar and Martin, Representatives Rabaut and Keefe (since deceased, replaced by J. Harry McGregor, R, Ohio), and the President appointed two member-consultants: Douglas W. Orr, then president of the AIA, and Richard E. Dougherty, ASCE president. The Commission had estimates presented by the Public Buildings Service for 1) a totally new structure; 2) a complete demolishing and rebuild-

ing of the existing structure, salvaging and re-using the exterior wall materials; 3) a remodeling that would leave exteriors, roof and third floor intact; and 4) a brand new third floor and roof, leaving the exterior walls in place. Had they torn down the old building entirely and replaced it with an "ersatz" White House of new limestone, alike in every detail, the Commission now figures it would have been only about 5% cheaper than the scheme they adopted. (Marble or granite, also considered, would have been considerably more expensive.)

But a new building would not have been the real White House, and the majority of the American people seemed to want to preserve their No. 1 national and historical shrine. In any case, sentiment and symbolic values swung the decision towards preserving the old outside walls, and plans were drawn up by Lorenzo Winslow, AIA, official White House architect, the Public Buildings Service and a raft of structural, mechanical and historical experts.

As executive director and co-ordinating genius of the project the Commission picked Maj. Gen. Glen E. Edgerton, U. S. A. (ret.), who had spent 40 of his 64 years as an Army engineer before going to Iraq as a waterways, flood control and irrigation consultant to the International Bank. (Among his previous jobs: chief engineer for the Alaska Road Commission and the Federal Power Commission, engineer in charge of river and harbor improvement in Florida and the upper Mississippi, Canal Zone Governor 1940-44 during the Third Locks Project.)

Bids and budgets

A public invitation to bid on a cost plus fixed fee basis netted some 40 inquiries, 16 actual bids ranging in fee from \$100,000 to \$950,000. Contract went to the low bidder, John McShain, Inc. of Philadelphia, who has built more public works in Washington than any other contractor—the Pentagon, National Airport Terminal, new State Department building, Jefferson Memorial. To give a wider spread of bids and more competition, the Commission stipulated that the contractor would have to supply his own small tools, trucks, clerical staff and overhead expenses. This, plus changes in plans, delays and mounting costs, has whittled away McShain's profit to a substantial loss. Says he philosophically, "It has cost our firm a small fortune for the privilege of doing this work."

Before the renovation got under way in December 1949, workmen were hand picked, then screened, photographed and fingerprinted by the Secret Service. With 41 subcontractors and 100-plus different members of 19 AFL unions involved, there was an average of 260 men on the job at any one time, as many as 350 at the peak of operations last year.

During demolition, workmen dug up from under the first floor a marble box obviously intended for discovery some centuries hence. Contents: two 1902 Washington newspapers, seven Indian head pennies, two nickels, a dime, four two cent stamps and a bottle of rye whiskey. The President ordered the box buried under the building again for some later generation. Other incidents as work progressed: the discovery of a sturdy pair of hobnailed shoes some workman had proudly bricked into the Home of the Presidents during a past remodeling; a three-week plasterers' strike; in May 1950 a thick picket line bearing pro-FEPC placards (the tip-off came when Paul Robeson drove up, had his picture taken with picket sign in hand, drove off again).

The original completion time of 660 days stipulated in the contract would have had the general contractor finished and off the job by last September, with finishing crews winding up

Associated Press



ready for occupancy in December. The repeated delays that have prompted tenant Truman to keep a "currycomb" and a "shotgun" after the builders are explained officially by 1) even more difficult reconstruction problems than anticipated, 2) the fine finish-work required, doubly time consuming because one operation had to wait on the completion of another, and mostly 3) the Korean war and subsequent cost rises and tightening of materials. The 660 tons of skyscraper steel had been bought before Korea, but priorities on other scarce materials had to be obtained through NPA and were subject to lags.

In November 1950 a cutback revision was made to reduce the over-all cost of the project, and by such economies as substituting limestone for granite here and there, some \$250,000 was saved. But nevertheless, two more appropriations were found necessary as work progressed, one for \$261,000 and another for \$100,000, bringing the total up to its present figure of \$5,761,000. The "overrun" beyond first estimates, says the Commission, represented only about 7-8%, "reasonable" by today's standards for big building. As it was, contractor McShain who was originally required to do 15% of the total work on the job, wound up doing nearer 40% and towards the end keeping a double force overtime at his own expense to get the work finished in time for the President to entertain Queen Juliana.

Wrecking with respect

The actual renovation was a sort of architectural dentistry, a beam by beam replacement of virtually the entire structure. Everything had to be done with kid gloves lest the whole building come crashing down or some of the ornamental detailing be broken apart. Explains Murray Bonham, carpenter's foreman, "The idea was to wreck the White House gently, *without* any TNT. Whenever the men on the walls got too rough, I'd make them come down and put them to work on the wheelbarrows. I'd explain we weren't wrecking a tenement and they'd get the idea."

Doors, hardware, furnishings, paneling and decorations were carefully removed, packed and stored, the rugs sent to New York, the famous paintings and historic fittings to the basement of the Smithsonian Institution. Most of the ornamental plaster designs on walls and ceilings had cheesecloth backing, which enabled the crews of sculptors and craftsmen to remove many of them intact. (After the designs were removed, about 25% of them were shellacked and covered with a gelatin that hardened into a mold. From these molds the new plaster casts were made on site, sharpened into more precise detail than the originals, which had been dimmed by coat after coat of paint. The other 75% was replaced without alteration, and the whole bill came to something like \$70,000.)

New lifts for old sags

As the dismantling progressed, vertical tie rods were used to hold floors together and a complex steel crisscross of shoring was introduced to prevent collapse. Borings down to 100' had revealed a solid gravel stratum 18' thick under the 25' of soft clay, so interior piers and exterior wall foundations were poured in pits dug down to this level. Heavy steel H columns were swung in through the lower doors in sections and assembled in place on the new separate footings inside, extending upward the full height of the cavernous interior to support the beams and trusses of the top story.

Another delicate maneuver was shifting the weight of the old outside walls to new foundations, contracted, along with the

shoring, to the New York firm of Spencer, White & Prentis. "Quite a job," says Edgerton. "We would dig a series of pits 4' square and 27' deep down to gravel at intervals around the exterior, then pour them full of concrete. When these had set we would dig another set of pits elsewhere and so on until we had a continuous foundation consisting of 126 separate pits joined together." As the independent, load-bearing steel skeleton went up inside the shell, this new underpinning and the old walls were tied to it by heavy anchor bars. Thus the outer walls became, in effect, curtain walls.

One of the greatest gains of the entire renovation was new basement space, two full floors of it (roughly 350,000 cu. ft.), made possible by bulldozing out 10,000 cu. yds. of clay dirt almost to the bottom of the new foundations. Taken as a whole, the operation was an ingenious engineering trick: gutting the old insides of the building, while holding up third floor and roof, scooping out basement levels underneath, shifting the whole 35' x 175' masonry box to new foundations.

Planning for such an extensive project was laborious: 190 architectural drawings, 518 shop drawings, well over 1,000 each of structural and mechanical diagrams. A further complication: each President had had his piecemeal remodeling work done under the aegis of a different agency, and the architects had no clear up-to-date records to work from, other than 18th Century sketches and the McKim, Mead & White report of the 1902 renovation.

The innovations

Today, four years after the idea first took form, the new White House has close to 1½ million cu. ft. of interior space (excluding the two big office wings), where it had 1 million before. Thanks to the recent improvements and the declining value of the dollar, its total valuation including 17 acres of grounds has gone up appreciably from a figure of \$26 million quoted in 1940—to probably between \$40 and \$60 million, although no recent appraisal has been made. With its vast new mechanical plant and 72 (ten new) employees, it will cost \$367,200 to run for fiscal 1953, an increase of \$100,000 over fiscal 1951. (The electricity bill alone will amount to \$33,890.)

Counting the rooms as you would in a normal house, there are 54 rooms and 16 baths, as opposed to 48 rooms and 14 baths in 1949. The full breakdown, including storerooms and basement space:

	rooms	corridors, halls	baths	lavatories
new	107	40	19	12
old	62	26	14	6

What's new, by floors, starting from the bottom (security prohibits publication of some floor plans):

Mechanical area (approx. 160,000 cu. ft. under the lawn, enlarged from the previous installation): transformer room, electrical repair shop, carpenter shop, compressor rooms for the air conditioning system. To carry an estimated cooling load of 300 tons of refrigeration, two centrifugal compressors were installed, each with an 1,800 r.p.m. motor and a 200 ton capacity. One can provide continuous cooling in case the other is out of service for repairs.

Basement: storage rooms, laundry, engineers' office, dentist's office, control room, water softener, men's and women's locker rooms and lavatories, incinerator, elevator machinery.

Basement mezzanine: storage rooms, barber shop, valet, servants' dining room, men's and women's lavatories. Five separate heating and air conditioning units have ducts big enough for two men to sit in, are linked to a central control and to thermostatic controls that allow different temperatures in different rooms. In winter all rooms in the building are warmed by preheated air; second and third floors are equipped with hot water convectors as well. The air units are designed to keep such spaces as the huge East Room at the proper temperature whether there are two or two thousand people in the building. Steam for heating the water for the convectors is supplied by two sets of connections running from a government central heating plant into both east and west sides of the building. The new systems replace four types of heat used in the old building: steam, hot water, hot air and electric.

Ground floor (see plan): principal renovations here were a big new white-tiled kitchen that can serve up to 100 extra guests, with stainless steel refrigerators, steam tables, ovens, fluorescent lighting and a theater-size electrical control board. Also new: a three-room doctor's suite, two new freight elevators and two new stairways to the basements. Two new "sidewalk" elevators were installed outside for easy access to the basements.

First (main) floor (see plan): major architectural change was converting the old main staircase from a narrow-width split-run design, facing on the inner hall, to a wider, single-width stair that can be entered more conveniently from the front entrance hall. Butler's pantry has a new service elevator.

Second floor: new living quarters for the Presidential family will at long last have enough closets, in the new space provided by replacing the thick interior partitions of brick with thinner steel construction. Also noiseless toilets, glassed-in tub-showers, new furniture, outlets for TV sets.

Third (top) floor: by raising the four corners of the 1927 hip roof, it was possible to add four new rooms, more storage space. Nestled behind the big stone balustrade and scarcely noticeable from the street, the old wooden solarium has been replaced with a polygonal metal one that has large picture windows overlooking the Potomac, bamboo furniture and blue-green walls. Hidden from worm's-eye view, it is not likely to offend architectural purists who complained so bitterly about the famous "Truman balcony" on the south portico.

Preserving the original interior dimensions of the historic ground and main floor rooms to within two or three inches

(Continued on page 142)



First, or main floor is almost identical to old layout, with:

1. a new stair design, facing entrance hall instead of central corridor
2. new service elevator in pantry

New ground floor is basically the same, with:

1. new stairs to basement
2. storage and toilet rooms under South Portico
3. doctor's suite and housekeeper's office
4. renovated kitchen and pantry
5. refrigerator room
6. passenger elevators in the same location
7. old kitchen restored and now used for a broadcasting and TV room
8. a new elevator to the basement



PHOENIX: bargain city in the U. S. for homes

Are the low-profit houses of Phoenix

a preview of what competition may bring to other cities?

"For giving values in homebuilding, Phoenix is the hottest spot in the U. S.," said Frank Richards of FHA recently.

Where else can a buyer get 1,220 sq. ft. of space with three bedrooms and one and a half baths for \$7,000?

"There's nothing wrong with housing that some real competition won't cure" is a familiar statement which seems to be borne out these days in Phoenix. At least it holds true for the customers, who are getting astounding bargains as the accompanying photographs show. Houses are \$1,500 less than in nearby Tucson, itself a buyer's dream town compared with most of the country.

While customers in Phoenix have the happy look of buyers at a fire sale, builders and subcontractors wonder how long they can stay in business. Many have already given up. "If this is healthy competition," they say, "we want no part of it."

FHA estimates some 7,500 houses were built in 1950, another 5,000 in 1951, forecasts 4,500 to 5,000 for this year. Mortgage money is so tight builders can't get FHA financing until a house is sold. There is no VA money except on direct government lending.

A builder named Rubenstein started the price slashing early in 1949 by offering a three-bedroom, 1,062 sq. ft. house for \$7,000. (He's out now, doing only Wherry Act jobs.) Then Sam Hoffman, (see p. 118) put a 1,095 sq. ft. house on the market for \$6,475. (He's quit building in Phoenix, too.) Now John Long, Hugh Evans and a few others are giving even more house for the money.

Out-of-town builders may ask, how do they do it—what's Phoenix got that we haven't got?

Here is why it happens in Phoenix

1. Competition is so rough it has forced prices down and values up. In the past 18 months five builders have gone bankrupt and many others have gone out of business. To survive these days, a builder has to put the squeeze on himself (profits per house are as low as \$210) and on everyone he deals with.

2. Subcontractors want work, keep their prices low.

3. Labor is highly skilled, highly productive. Union leaders claim Phoenix has the best producing labor in the state. High quality workers are attracted there by the good weather, and by almost steady work since 1940. While wage scales are above the national average, production is too. Bricklayers get \$3.50 per hour but the best lay 1,000 bricks a day. Ninety-five per cent of workmen are organized, are proud of their skill and their ability to deliver a full day's work.

4. Land has been cheap. First buyers for out-of-city tracts paid less than \$800 an acre. Today land is from \$1,500 to \$2,500 per acre and FHA has set a minimum lot width of 65 ft.

5. Improvements are cheap, costing about \$4.50 a front foot (\$1 each for water, sidewalk and roll-curb gutter, \$1.50 for gravel and black-top road). Septic tanks are used.

6. A builder's overhead per house is low because the weather lets him build about 51 weeks a year.

7. Dry climate permits economies such as cheaper footings and foundations, pumice block (made nearby) finished inside with paint or plaster without lath or furring strips, and an inexpensive heater. Cement slab serves as finished floor except in bath and kitchen. Outside city limits, where most building is done, codes are reasonable. Builders save at least \$300 per house on simplified wiring, plumbing and savings in land improvements.

8. FHA says that some large builders make their entire profit on the discount their volume gets them under the wholesale price. **Is Phoenix overbuilt?** No one knows, and there is a wide difference of opinion. The city is still a real frontier and that makes it hard to predict what may happen.

West Coast industries are dickering constantly with the idea of putting in annexes in Phoenix. If one or two airplane factories moved in, as they have into Tucson, there could easily be a need for several thousand more houses overnight.

Wage scales in Phoenix are as follows: bricklayers \$3.50; carpenters \$2.67; cement finishers \$2.42; electricians \$2.62; sheet metal men and roofers \$2.25; plumbers \$2.50; plasterers and lathers \$3; painters \$2.52; tapers \$2.65; laborers \$1.77 to \$2.



Smith & Sanderson sell this two-bedroom, Title I house for \$5,545. The roof overhang and the horizontal lines of the pumice block make the house seem larger than it is.



A group of Hugh Evans' houses in Cavalier Parkway showing character of neighborhood. Largest three-bedroom houses sell for \$7,395. Other three-bedrooms sell for \$7,000. Smaller two-bedroom are \$5,800. Evans turns the building operation over to a general con-

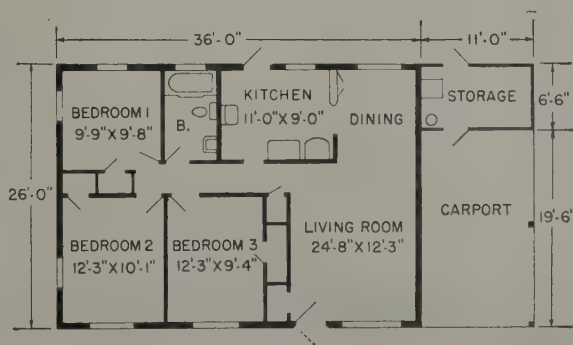
tractor, while he specializes on plans with architect L. W. Coffey and handles the sales. Evans is a great believer in bright colors, using blues, pinks and greens. Model houses are furnished to suit the tastes and pocketbooks of buyers. This also helps make sales.

Hugh Evans of Cavalier Homes

After ten years of building in Dearborn, Mich., Hugh Evans went to Phoenix in 1947. In the past three years he has built 500 houses and he is tough competition for all other builders. Last year he completed and sold one house a day for 100 days.

Evans says: "I do it the easy way. I sell the houses but I contract all the building." He is content to make about \$250 per house profit and his contractor makes the same.

His 936 sq. ft. two-bedroom house sells for \$5,800. His 1,220 sq. ft., three-bedroom house is \$7,000, and he has a better house for \$9,395, which has three bedrooms, 1 $\frac{3}{4}$ baths and 1,416 sq. ft. With land prices and materials going up, he wonders if he can hold this price under \$10,000, which he wants to do because of the increased down payments under FHA on anything over that figure. Evans' reputation as a sound builder is a great asset.



Charles and Arthur Schreiber, architects and builders, produced this two-bedroom 930 sq. ft. house (plus carport) for \$5,700. Adding land costs and profit, they sell it for \$7,200. Its block construction is typical.



One of Evans' \$7,000 houses, with storage room behind the carport. Builders are required by FHA to provide duct work in ceiling for evaporative cooling, but will not let mortgage cover cooler.



Photos by Stuart A. Weiner

Long has 12 exteriors on his two \$7,000 houses. Buyers get a choice of one and a half baths without a carport or one bath with carport. All these houses have three bedrooms.

Floor plans at right are for \$7,000 houses with carport and inside storage or (partial plan) no carport and extra half-bath.



Builder John F. Long

John Long's houses are the best value in town, according to one FHA official. Thirty-one-year-old Long is an aggressive builder who shares with a few others credit for the remarkable bargains offered to Phoenix house buyers.

He was practically forced into building houses. In 1947, just out of the service, he built a home for himself. Before he could move in he was offered such a good price he accepted it. He built a second house and the same thing happened again. Now he keeps 40 houses under construction, tries to finish eight a week. He has sold as many as 90 houses ahead of construction by using full page ads in the newspapers. Unlike Evans, he is his own contractor, subs only a few trades.

His \$7,000 house has 1,092 sq. ft. plus a carport and outside storage room. It is of pumice block, plastered on the inside, has one and a half baths, asphalt tile in kitchen and baths, kitchen exhaust fan, 4" of rock wool in the ceiling, cooling ducts in the roof (roof cooler must be added by the purchaser), steel windows, tile drainboards, concrete ribbon drive and sidewalk, concrete curbs, black-top street.

When asked what he would add to his houses if he could get an extra \$500 for them, he laughed and said he would use it to make a decent profit rather than the \$250 he makes as both builder and contractor. More seriously, he said he would spend \$300 to get a forced air heating system, put 4' of tile in the bath, spend \$80 for a 2' overhang, use mahogany doors instead of pine.

"This competition is interesting," Long says. "It keeps a fellow on his toes, and gives the public a better house for the money."



COST BREAKDOWN ON LONG'S \$7,000 HOUSES

Ditch digging	\$11	Lintels	46
Plumbing & labor		Doors	129
incl. heater & meter	770	Hardware	54
Electrical	127	Concrete & forms	344
Fixture allowance	33	Louvers	11
Plasterer	435	ABC fill & silt	22
Ducts	101	Total lumber	693
Insulation	38	Truck	40
Roofing	196	Misc. items	101
Bricklayer	495	Labor	720
Painter	275	Supervision	55
Glazier	28	Tax	93
Ceramic & asphalt tile	111	State compensation ins.	89
Cesspool & tank	85		
Lather	224	TOTAL (excl. raw land,	
Cabinets	96	improvements & profit)	\$5,575
Windows	153		

House at right is one of a group that Architect John Sing Tang did for Rancho Del Monte which sells for \$13,900 to \$15,900 and which is on half-acre lots. Architect held to a simple gabled roof over a rectangular plan, allowed for generous protective overhangs. In model shown he extended the roof to cover an outdoor living-dining-play area and the carport, leaving open rafters over the drying yard area. Long roof lines magnify extent of house and harmonize with horizontal character of the building. Kitchen, dining and living areas were left rather open. One model has two bedrooms and den, others three bedrooms. All have one full bath plus one partial bath, and carport.



Julius Schulman



Photos by Stewart A. Weiner

John Long also builds \$10,000 houses such as the one at left. It has three bedrooms, one and three-quarters baths, central heating, wider lot than \$7,000 house. Houses are located in an old orange grove—a sales advantage.

Long's \$10,000 houses (below) have plenty of room between them, and the orange grove provides pleasant atmosphere. Houses were designed by architect G. C. Conyers, are of same type punice block as other Long models.



For more about Phoenix, see next page

SAM HOFFMAN OF PHOENIX

What kind of man is he, who swears some day to be the country's biggest home builder?

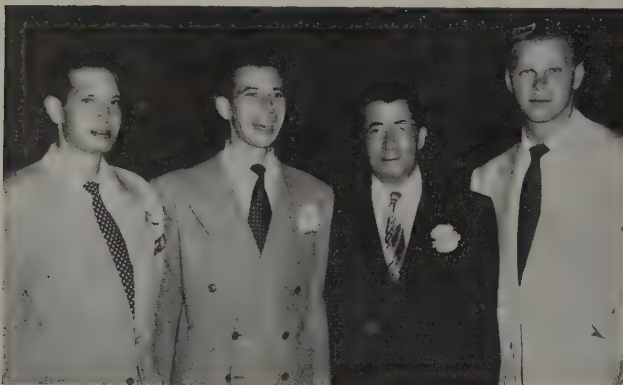
Sam Hoffman is different from all other builders. He is deliberately setting out to be the country's biggest homebuilder. At the moment he has a long way to go to catch up with the leaders, but his driving, restless ambition has already carried him into six cities where he has built some 3,600 houses in five years. This year he says he will build 3,000 more.

But building in six cities is not enough to satisfy Hoffman. In addition to his present operations in Phoenix, Tucson, Albuquerque, Denver, Cleveland and Pueblo he has already cast a calculating eye on Chicago, Omaha, San Diego and other spots where he is convinced his high-production, low-profit methods would let him undersell the market by \$1,500 or more. One obstacle is his shortage of sons and sons-in-law to run his new operations. He has mushroomed so fast he is short of key personnel. His building operations are run under F & S Construction Co. (for Father & Son) but he prefers to be known as Hoffman Homes.

Hoffman's meteoric rise as a housebuilder has taken only five years. In 1947 he turned up in Phoenix with his family and a truckload of possessions on his way west from Chicago to find a new place to live. He was stone-broke and looking for something to do. He knew the building business because he had been a plasterer and a cement finisher in Detroit, after he had come from Poland in 1923, and had also worked as a carpenter.

In Phoenix the housing boom was in full swing and to Hoffman, as to many another newcomer, housebuilding looked like a sure thing. Starting by building only one house at a time, he has skyrocketed his holdings until his paper assets are now over \$4 million. But rival builders point out Hoffman's total debt is also impressively high. They claim he is spread so thin he is like a clipped-wing plane: he must fly at full speed to stay up.

Photos: Robert Markow



Hoffman Homes' officers: (l. to r.) vice-president Robert Rosner, who manages Cleveland; Jack Hoffman, Secretary and Treasurer; President Sam Hoffman; vice president Sol Dichter, manager at Denver. Sam is proud his partners are college men, gives them lots of responsibility.

Can he keep going?

That's the big question about Hoffman. Rival builders in Denver, Cleveland and Pueblo, who have seen this outsider move in and drastically undersell them, relish the hope that Hoffman will overextend himself and go broke. They figure that he must operate on a shoestring, using other people's money—first the deposits of his customers, then the money of his suppliers who have to wait until houses are finished to get their payments.

"Sure we use our deposits for operating capital," says Sam Hoffman. "What's wrong with that? Anyone who wants his money back can always get it." Operating without interim financing helps him to undersell his competition. His payments to some suppliers may be slow, but he is a big buyer and seems to have no trouble getting materials. Even in Cleveland, where his only real financial trouble occurred, his credit is good.

Hoffman considers himself far more conservative than builders who plunge ahead on large scale operations before their houses are sold. "We never speculate," he says. "Every one of our houses is sold before we start construction."

In his favor he has several long-term assets which may be the deciding factors that keep him in business. Wherever he builds his basic aim is to deliver the biggest value in town—a merchandising idea that is hard to beat. He has no soft and flabby waste in his operations, either in personnel or methods, because he cut his teeth in Phoenix where competition is so tough a builder has to be efficient. Having already experimented in six cities, he has learned a pattern for moving into a new town. Thus his greatest organizational problems are probably behind him. Certainly he should have learned a lesson in Cleveland, a Kasserine Pass into which he charged with insufficient knowledge of the opposition and no protection at all for his flanks. If he is smart, that should never happen again.

Sam himself is both the firm's greatest asset and its greatest hazard. The very qualities that carry him ahead—the fearlessness that stimulates him to slug it out with rival builders in strange towns—may be his undoing. His dream of sheer bigness may blind him to a need for consolidating his position before he moves to still more cities. He would like to build in a dozen northern cities in summer and move his workmen to a dozen southern cities in the winter. Hoffman himself has a cocky confidence. "Only the government can put me out of business," he says, thinking of restrictions that might shut him down.

Trouble in Cleveland and Denver

If other builders hate to see Hoffman move into their towns it is because his prices are so low. As a graduate of the Phoenix school of building, his idea of a fair profit is 5% or even less on the first houses he puts on the market. "His big houses are \$2,500 under the local market," said a rival Denver builder with wonder. "He could add a thousand dollars to the price and still sell them just as fast."

But Hoffman's aim is to sell houses as cheaply as possible



These airviews show a portion of Hoffman's projects in Albuquerque where he has finished about 1,200 houses. Shopping center above is at the Hoffmantown area.

and he is delighted when he can force other builders to cut their prices. "My public is my idol," he says. "My only relaxation is to go through the communities I've built and see the people." His profit philosophy is the principle of the quick nickel versus the slow dime. "Volume purchase and volume production are my secret." He prefers to build at least four houses a day wherever he operates: "Four a day is the happy medium. Below four, costs are too high. Over four, it's all gravy." One of the reasons he quit building in Phoenix was that the market was too small to let him maintain a fast production line. Also profits were so low (partly through his own price cutting) that he could make more money elsewhere. However he may build again in Phoenix this year.

In a new town Hoffman doesn't expect to make money on the first 50 houses, as he considers that a breaking-in period. But even so, he wasn't prepared for the trouble he got into in Cleveland and Denver. In both cities the local builders ganged up on him. They were helped by such factors as the weather and Hoffman's plugging optimism.

For his troubles in Cleveland, where at the moment he is probably between \$250,000 and \$300,000 in the red, Hoffman says he blames the weather. The winter before last was unusually cold and the spring was one of the wettest in history (even the experienced builders at Chicago's Park Forest were 500 houses behind schedule). Hoffman had hoped to build nine months a year but found the weather cut him to six. "My overhead jumped to 38% instead of being 8%, as it is in the Southwest."

But optimistic Sam had also underestimated the cost of construction. Both labor and materials were higher than he had forecast, and he seriously overestimated the volume of work he would get from his men. In Cleveland he discovered the unions fixed a worker's production and a man's output was considerably lower than in Phoenix. Other builders say he had planned to bring in many of his own men but the unions would not let him.

Sam himself makes no criticism of the Cleveland unions, but one of his staff says, "It was labor that crucified us. We couldn't get men, especially bricklayers." Finally, after a great deal of trouble, Hoffman got one crew of bricklayers.

There were other delays all along the line. He had trouble getting materials, paid nearly three times normal rates for items such as rock lath. Plumbing that cost him \$750 installed in Phoenix and \$1,100 in Denver was \$1,500 in Cleveland.

When Hoffman opened a sales office in Cleveland in 1950 he promised to build his three-bedroom, two-bath brick house (1,345 sq. ft. plus an enclosed garage) for the astonishing sales price of \$9,950. He had 418 sites and promptly signed up about 100 buyers who paid \$500 down and agreed to pay \$850 more when the colors were chosen.

This price was so phenomenally low that many prospects asked the local Homebuilders Association if the deal was honest. The Association sent five members to investigate. They warned

Hoffman that his house would cost much more than \$9,950 and he would lose his shirt but Sam went right ahead. To convince skeptical city fathers of suburban Euclid that he was an honest builder, he flew the city engineer, city inspector and one councilman at his expense to Albuquerque and Phoenix and turned them loose in his neighborhoods to talk with people who had bought his houses. They were agreeably impressed.

But in a few months, blaming material shortages and rising costs, Hoffman announced he was halving his original 418 house program; later he announced another cut to 100 houses. Then he raised his price to \$13,000 and offered to refund money to buyers who didn't want to go through with the new deal. Twenty-eight refused refunds and by bringing suit against him got their houses for \$9,950. Others paid more and he built 62 in all. Now the price is \$14,500 and he hopes to build about 117 this year. At that price, other builders insist his house is no bargain. It is larger than the typical Cleveland house at the same price and has an extra bath, but they say the heating system, interior finish and quality of wall between house and garage are inferior.

In Denver opposition from other builders reached the point where, as members of NAHB, they officially protested to FHA that he was not living up to its requirements. FHA sent an inspector out from Washington who found a few irregularities in Hoffman's houses, particularly in the quality of his wood trim; but when he inspected the houses of other big builders who had protested he found even more irregularities! "Hoffman was giving a better house for the money than anyone else," FHA reported. "They fell into the pit they'd dug for me," is the way Hoffman sums it up. But if Hoffman has forced some Denver builders to cut their prices, as he says he has, they have had the grim satisfaction of seeing him raise his. He is just beginning to show a profit in Denver where he has built steadily through the past winter and is optimistic about the future. Happily for him both Tucson and Pueblo are turning into boom towns and should be profitable places for his operations. He has made money in Phoenix and Albuquerque.

How Hoffman operates

Phoenix is his main headquarters and from here 28-year-old Jack Hoffman, secretary-treasurer, keeps the status of every Hoffman house in every town. Jack is a graduate accountant from the University of Illinois and, according to Sam, "the brains of the business." Son-in-law Sol Dichter was in charge of Albuquerque but now runs the Denver operation. Sol's brother Michael, as purchasing agent and trouble shooter, spends much of his time on the road. Son-in-law Robert Rosner runs Cleveland. Sam Hoffman keeps an eye on everything, flying 5,000 or 6,000 miles every week, some of it in his own airplane which Jack and Sol fly. Trains are never fast enough for him.

The firm now builds only two houses: the brick veneer which sells at \$10,000-\$14,500, and a three-bedroom, two-bath frame

house with asbestos siding at \$8,450. A two-bedroom house built in Phoenix for around \$6,000 has been discontinued.

Mass purchasing is a basic practice. Hoffman says he buys five carloads of pipe and 50 million feet of lumber at a time. He buys all his furnaces from one firm, brings the local distributor in on the deal so he will do the servicing. "I won't tell you my costs because it would make other builders mad to know what I pay," he says. But despite his mass buying through the Phoenix office he also buys what he can in each community, sometimes paying more than he needs to keep local good will.

He always builds a local woodworking shop where he makes his cabinets, window frames and does his precutting. He subs a varying amount in different cities, but it runs around 20%. With his own equipment he handles his land improvements, saying it costs him "only 7¢ a cubic yd. to move earth instead of 65¢, and \$50 to grade a lot instead of \$200." He has about 800 men on his own payroll, subcontracts plumbing, electrical work, roofing, tile setting and painting. He tries to plan the work so that five men and a foreman are a team on all jobs but uses no particular labor-saving gadgets or methods. His brick house is plastered inside, while the smaller one is of dry wall construction. Both are slab construction, with a warm air furnace in the attic which blows air through short ducts to each room.

Other builders criticize his interior trim and finish, but Hoffman shrugs this off, feeling that he is giving a bargain and that speed of finishing is essential to his low price. Among the firms who have bought his mortgages are Prudential, Teachers Insurance, Philadelphia Savings and the Bank of New Mexico.

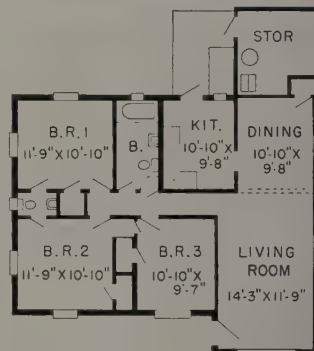
Sales are handled by Bert LaMar, general sales manager who has two men in each town. Sales costs are only $\frac{1}{2}$ of 1%. Advertising manager Jim Woodhams is now preparing a national advertising campaign "just like for any other national product," and the firm will start plugging Hoffman Homes in newspaper ads in all towns where they are building and in a number where they plan to move. They hope to make "Hoffman Homes" a national trademark.

Sam Hoffman won't be satisfied until he is producing houses in scores of cities and at a rate that no other builder has ever equalled.

"My aim is to turn out a house every minute during the 8 hr. day. That's my dream. It's only a dream but I've seen a lot come true in the past few years."



Hoffman's standard "economy" house which he is now building in several cities at around \$8,400. It is a three-bedroom, small scale version of the larger, brick veneer house. Half-bath between two larger bedrooms is a sales asset. This model has asbestos siding, typical frame construction.



Floor plan above is for brick veneer house shown on opposite page and similarity to that of economy house is apparent. Row of houses below is in Phoenix; they are of pumice block. This model has now been discontinued.





Photos: Stewart A. Weiner

A row of Hoffman's brick houses on a cul-de-sac street in Phoenix. This is the standard "deluxe" house that is being built in all cities where Hoffman builds, and it ranges in price from around \$10,000 to \$14,500. It has 1,345 sq. ft. and is usually on a 70' lot.



Both house above and those at right are in Phoenix. Houses this size sold for \$10,000 there and were considered bargains. This is the same house built in other cities which was put on the market for as much as \$2,500 under existing prices for that size house. The garage is an expandable feature and many families have turned it into a den or extra bedroom. This house is always plastered, while smaller house has dry walls. Original design for this house was by Architect Ralph Haver of Phoenix.



ADVICE TO THE APPRAISER

To 600 appraisers working in 137 field offices of the Federal Housing Administration (FHA), a fat U. S. Government document called Form 2049 is the professional bible. Better known as the UNDERWRITING MANUAL, Form 2049 sets out to define for FHA's appraisers just exactly what it is that makes a building a good or bad mortgage risk.

While the MANUAL is admirably specific in discussing such matters as plumbing or the "Cyclical Fluctuations Percentage of Minimum to Maximum Employment" (whatever that may be), its authors are less sure of their ground when discussing "Architectural Attractiveness" or "Visual Appeal of Property." In fact, their vision seems to become increasingly blurred at the very moment when specific design features should be brought most sharply into focus.

To remedy this situation, HOUSE & HOME intends, from time to time, to discuss aspects of builder-house design which the FHA MANUAL to date has dealt with rather casually. While our message will be addressed primarily to the FHA appraiser, we hope and trust that it will not be entirely ignored by the homebuilding industry itself.

The subject of our first message is

THE BANANA SPLIT

... Or how to keep your house from seeming to
fly apart in all directions

WHAT FHA FORM #2049 SAYS ABOUT DESIGN "A structure of the so-called 'shirt-front,' or one-sided treatment design, calls for a low rating. . . . Use of false effects . . . or the unusual . . . combination of materials . . . affect the rating of this feature adversely. . . ."—(Feb. 1938), Section 858.

"Simplicity is freedom from complexity, intricacy and elaborateness . . . the avoidance of excessive embellishments . . . of immoderate variation and inappropriateness in the use of materials. . . ."—(Jan. 1947), Section 418 (4) a.

One sure way of making a small and squat facade look even smaller and squatter is to cut it up into tiny panels of different facing materials—stone and brick veneers, asbestos or wood shingles, vertical or horizontal siding, large and small panes of glass. The patchwork quilt architecture that results from such vivisection is the *Banana Split* of the building industry.

The easiest way to tell whether you are living inside a *Banana Split* is to look at your street facade. In all probability, this will look like the scene of a tragically unnecessary collision between four or five entirely different (and very small) ranches. One may be of stone; one of brick; one may be covered with dark siding; the other with light shingles. The only thing that these very different ranches will have in common is a roof, and *that* (more often than not) forms a very tenuous bond indeed.

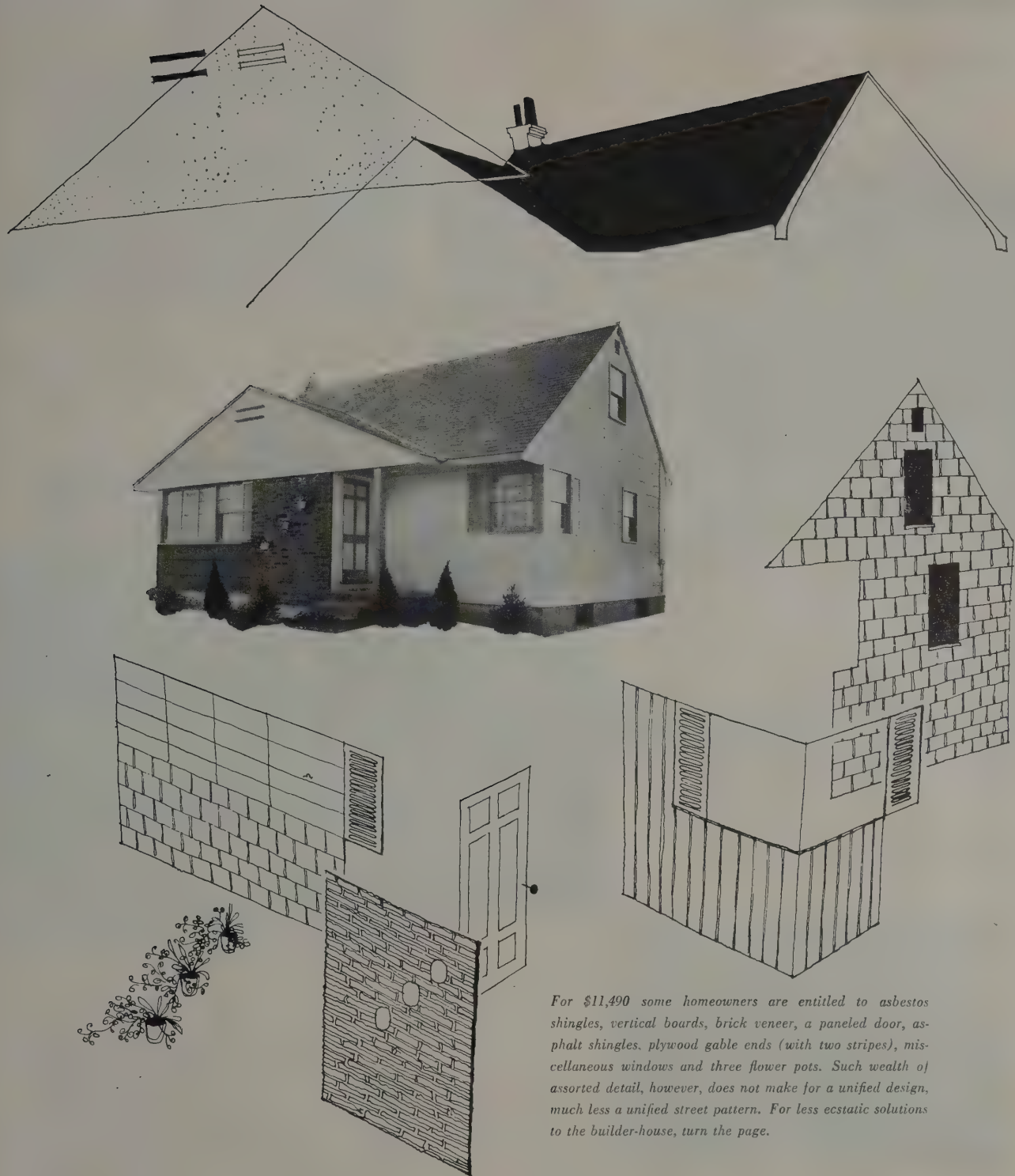
On these pages we have assembled some fairly typical (and by no means extreme) pictures of *Split Banana* facades, and shown, next to them, some builder houses whose facades seem relatively calm, well proportioned, clean and effective.



An early pioneer of the *Banana Split* is J. T. Halstead, Ebenezer Cottage, Broad Lane, Rochdale, Lancs., England, whose facade treatment includes such assorted tidbits as broken pots, plates, oyster shells, jugs and beer mugs.

The Ingredients
of segment below of
the American skyline
are stone,
asbestos shingles, and brick,
vertical, horizontal
and diagonal siding,
scalloped eaves
and other frills.
The result is variety
bordering on chaos.
Note the sense
of impending conflict
conveyed by some facades,
and the rapid changes
in window openings
and sill heights.





For \$11,490 some homeowners are entitled to asbestos shingles, vertical boards, brick veneer, a paneled door, asphalt shingles, plywood gable ends (with two stripes), miscellaneous windows and three flower pots. Such wealth of assorted detail, however, does not make for a unified design, much less a unified street pattern. For less ecstatic solutions to the builder-house, turn the page.

Photos: Don Forbes Studio, J. Alex Langley, J. Leigh Sheridan

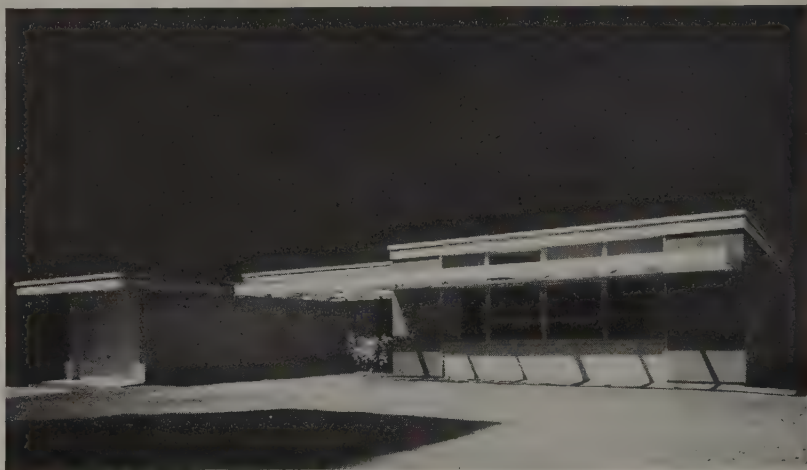


Gottso-Schleisner



These two houses have virtually the same three-bedroom plan; yet the Harman steel prefab (left) is simple and clean, while the house above boasts half-a-dozen different and conflicting materials and patterns on its principal facade. Note also the differences in fenestration.

The three-bedroom house by architect Gregory Ain (right) was built in New York's Museum of Modern Art garden in 1950. Its clean surfaces, modular rhythm and simple roof lines help unify an otherwise complex composition. In the builder-house shown below, arbitrarily placed brick veneer panels and broken roof lines accentuate (rather than diminish) the architectural complexities of the house.

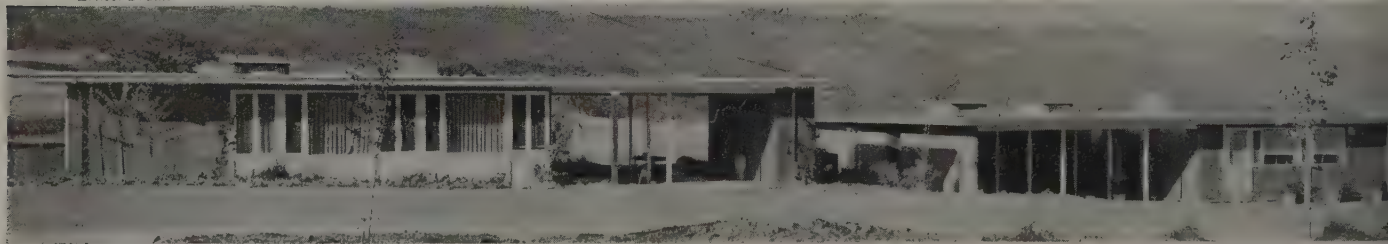


Esra Stoller



How dignified and handsome a suburban street can be made to look is effectively demonstrated by architects Funk & Stein in their Palo Alto development. Plain surfaces, rhythmic fenestration, strong roof planes produce a unified street.

Ernest Braun





Ben Schnall

The four houses shown here have just about the same basic plan. Yet whoever designed the three miniature ranches at the left seems to have been determined to use every surface finish known to Sweet's catalogue. The result: three houses that appear to have suffered periodic (and disconnected) expansion programs. Levitt's Landia house (above) has only one surface material (striated asbestos), a clean and uninterrupted roof line, simple and well proportioned fenestration. Result: it looks bigger than all the other three laid end to end!

A similar example is architect Gregory Ain's Mar Vista project near Los Angeles, in which each facade is a coherent simple and clean-cut design. Variety is achieved through changes in planting without damage to the unity of the streetscape.



Julius Shulman

THE HEAT PUMP

A new unit advances an old principle.

**Air-to-air system frees the heat pump
from its chrysalis of wells and buried grids.**

**As heating unit AND air conditioner,
its possibilities look promising.**

But high cost keeps it in luxury category today

For residential use the building industry generally has snubbed the heat pump as impractical, expensive and complicated. But when a U. S. commercial giant, General Electric, sets up a separate department for the manufacture, sale and promotion of a new unit it may be time to take another look at the possibilities. Chief factor in the resurgence of this long known principle is the demand of the American housebuyer for year round comfort, as evidenced by the increased use of air conditioning units in new houses (see p. 128). This trend emphasizes the heat pump's ability to pump heat either *in* or *out*, through one machine. And the heavier the demand for cooling, the better the heat pump is able to compete with existing systems.

It uses these laws of nature:

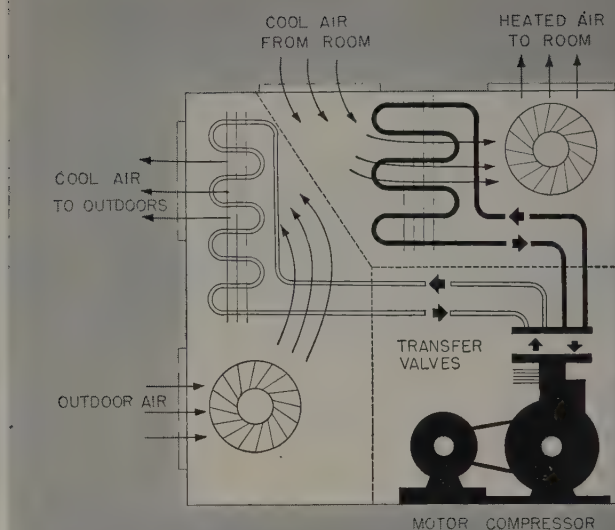
1. Heat exists in air at all temperatures—low or high.
2. Heat always flows from a higher temperature to a lower one.
3. Heat is absorbed by evaporating a refrigerant. Compressing a refrigerant raises its temperature, enabling it to give off heat.

How it works

GE's unit, to oversimplify it, acts as a giant reversible refrigerator. In winter, it extracts heat from outside (and there is some heat in even the coldest air) and warms the inside air. During the hot months, it removes heat from within the house and exhausts it outside. Conveyor of this heat is the familiar refrigerant, Freon 12. The unit uses no coal, oil or gas in either process, but operates entirely by electricity. Ordinary duct work carries the filtered and dehumidified conditioned air throughout the house.

Biggest meaning to housebuilders and architects is that the unit can be planned right into the house without the "tailoring" necessary with heat pumps that use water or ground as a heat source. With an assembly line set up at Bloomfield, N. J., GE is able to offer "ready to wear" 3 h.p. units capable of heating and cooling homes of 1,200–1,500 sq. ft. heating area, and 5 h.p. models sized for homes of 2,000–2,500 sq. ft. All the installer has to know is the size of the house, local temperatures, and type of insulation to be able to recommend the proper size and installation.

Its performance coefficient of 3 (in an average season) means the heat pump gives up 3 units of heat to the house for every one that it "buys" in electrical energy. Utilities using coal or oil as



WINTER: Outdoor air gives up its heat to much colder evaporated refrigerant. Compressing this refrigerant raises its temperature and enables it to give off the absorbed heat to the indoor circuit compartment where air from the house travels over the heated coils, then is returned.

original fuel estimate that they can deliver current to the user equal to 30% of the energy in the fuel. This means that the heat pump delivers 90% of the total fuel energy, as against an ordinary furnace's 50–70%. The next goal is a coefficient of 4, which will enable the machine to make substantial fuel savings since it will produce heat equal to 120% of the fuel energy.

Why air-to-air?

Most of the 2,000 heat pumps now in use in the U. S. have constant temperature well water or ground as a heat source, using deep wells for water systems and underground pipe grids to extract heat from the earth. Both types of installations are expensive and demand optimum conditions in underground water and soil. But the extension of the heat pump market from areas with abundant high temperature (45–60°) water sources into zones where either restricted water sources or lower (35–45°) temperatures are the rule makes a system based on universal and unrestricted air most likely to succeed.

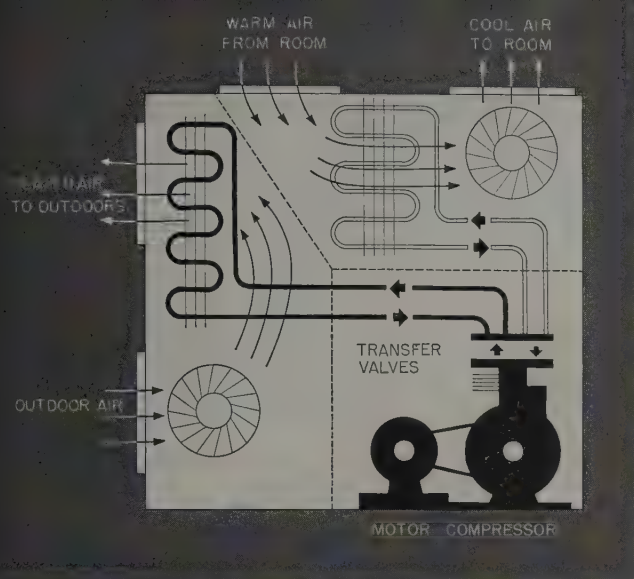
GE is wisely limiting its initial marketing efforts to selected areas, mostly in the South and Southwest, in order to maintain close contact with installations while training a national organization to correctly apply and install this new equipment.

A serious drawback to the air-to-air systems is the cold air of central and northern U. S. Today, supplementary resistance heating coils are added to heat pumps in these areas, controlled by outside thermostats. When the outside air drops below the temperature level needed to satisfy the heat load, the additional units cut in. As further technical refinements are made, the heat pump using air should expand its effective range.

Still a luxury item

No heat pump is a "cure-all," and the new GE unit is no exception. There have been too many Sunday supplement stories about "free heat" from ground or air. In cold zones of the U. S. the plant needed to extract heat from low temperature air may be so large as to be uneconomical, and the need for cooling may be limited. But in any area where the cooling load approaches, or exceeds, that of heating, this unit promises to make sales conscious builders sharpen up their pencils and wonder, "How much?"

Right now, the biggest drawback to mass sales is the high orig-



SUMMER: Warm, moist air from house passes over refrigerant coils, where it gives up its heat and excess moisture. This heat passes to the outdoor circuit compartment where it is dissipated to the outside air. The then-cool, dry air is recirculated through the house.

inal cost of the equipment, not operating expense. Because installation figures vary greatly, it's impossible to get exact costs, but the ordinary heat pump installation would run 20-50% more than the price for a furnace and air conditioner combined. With mass production just beginning, GE engineers are aiming at eliminating this differential and making the heat pump completely competitive with any complete air conditioning system.

Operating costs, however, are already within range in many areas. From experimental installations, GE has obtained some typical operating costs. They assume a 1,200 sq. ft. six-room house, well built and insulated, in the New York area. Using average electrical rates, the annual operating expense would be:

Heating	9,500 KWH	\$190 approximately
Cooling	1,200 KWH	24 "
Annual cost	10,700 KWH	\$214 "

In the southern Texas area, GE found that the same size house (without storm sash and with less side wall insulation) would have this annual operating cost:

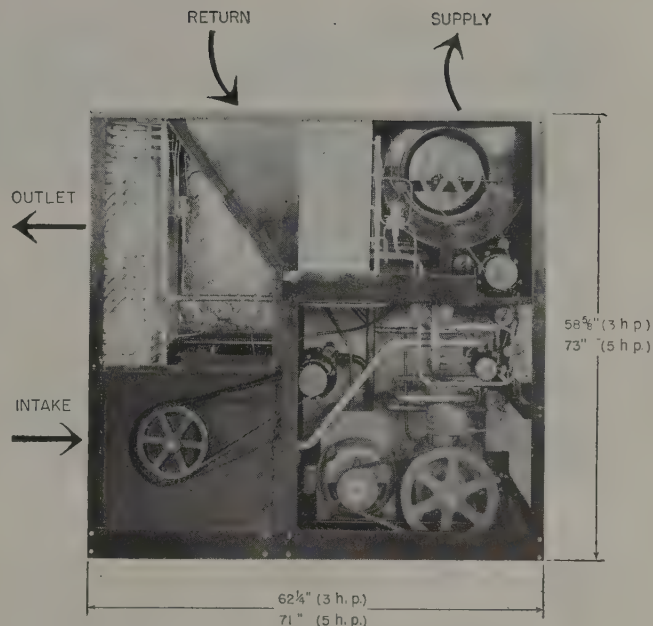
Heating	3,200 KWH	\$ 64 approximately
Cooling	5,800 KWH	116 "
Annual cost	9,000 KWH	\$180 "

Costs for specific areas are subject to a wide variation, mainly because of utility rates being set up on the basis of ordinary residential loads. A heat pump might cost \$60 annually to operate in one city and five times that in another part of the country. As the market for this machine grows, power companies will be better able to compute an applicable rate for the current it uses.

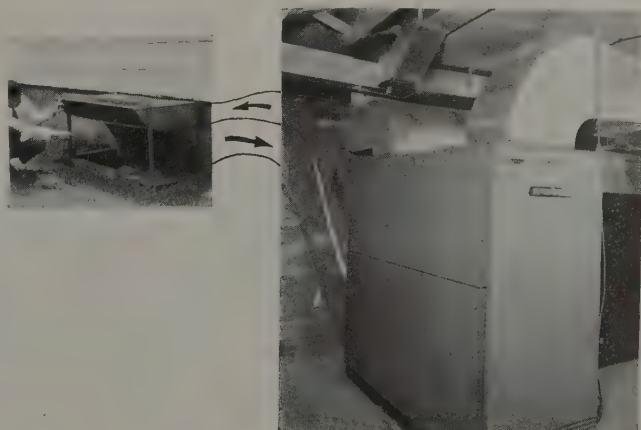
The true economic usefulness of the heat pump only appears when it is not considered as a "heater" only, but as a machine for providing air conditioning throughout the year. In turn, its potential depends on four factors:

1. Climate—where cooling is necessary and desirable
2. Electric power—its availability and comparative cost
3. Consumer habits, and familiarity with heat pump advantages
4. Economic—area buying power and national prosperity

The heat pump stands today about where the automobile did in 1915. Basic principles have been mastered, but cost still restricts the market. Yet to come is the mass production needed to cut cost, widen the market. Automobiles were once expensive, too.



COMPACT UNITS are 28 1/2" wide, fit through doorways. Though integrated system is new, component parts (compressor, motors, heat transfer surfaces, etc.) have been tried and proven in other GE equipment.



DUCTWORK required compares with that needed for air conditioning, is larger than for heating alone. Automatic switch, controlled by house thermostat, makes changes between heating and cooling as often as necessary to maintain the desired temperature.

FULLY AIR CONDITIONED HOUSES FOR \$12,500

**Dallas builders start a revolution
with contemporary houses
designed around a central air conditioning system**

Location: Dallas, Texas

GEORGE MARBLE; GUY BARNUM, ASSOCIATE, Architects

LEWIS & LAMBERTH; LAUGHLIN & SILVER, Builders



Six different floor plans are being built with three facades for each plan.

For years Dallas has had a reputation for some of the most conservative builders' houses and some of the hottest summers in the U. S. A. But last month Dallas changed the first and coped with the second with a group of houses that are notable for their fresh design, for being the first large group to be air conditioned and for selling at the remarkably low price of \$12,500.

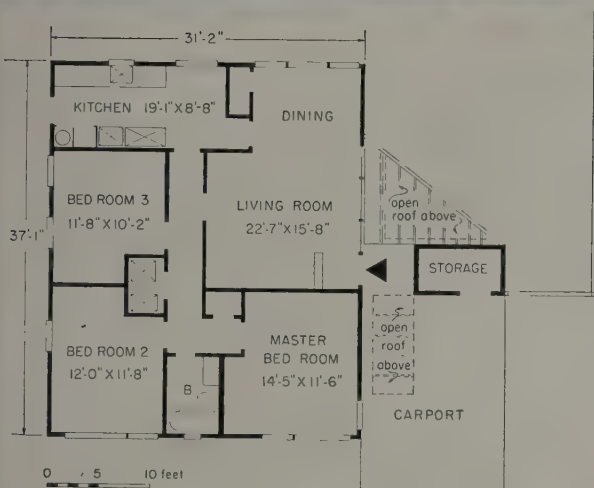
Dallas builders have known for a long time that some one would have to make history by air conditioning a house in the \$10,000 to \$15,000 price class. That honor has now gone to two teams of builders: Lewis & Lamberth, and Laughlin & Silver who worked together on the houses shown here.

The impact of these new houses will be felt far beyond their immediate vicinity. Like the first cars with four-wheel brakes or automatic transmissions, they will be widely copied if they sell well. At least a dozen other builders have already admitted they will install air conditioning too if the public takes to these houses.

Dallas is already one of the most highly air conditioned cities in the country. But up to the present most houses with a central cooling system have been in the \$25,000 and up class. Owners of smaller houses have been content to cool one or two rooms. Merchant builders have not been sure that buyers would want to spend as much as \$1,000 extra for a central cooling system. Since the opening of these houses on March 23 that question has been answered. Some 25,000 enthusiastic people crowded through the houses the first Sunday. Enough made the large down payments (up to \$2,900) to convince the builders that they will have no trouble selling their 214 houses.



Two building firms bought the land and developed it together. Each will build half of the 214 houses. This, the first contemporary project to be built in Dallas and approved for its forward-looking design, reflects great credit on local FHA and VA officials, as well as on the progressive builders.

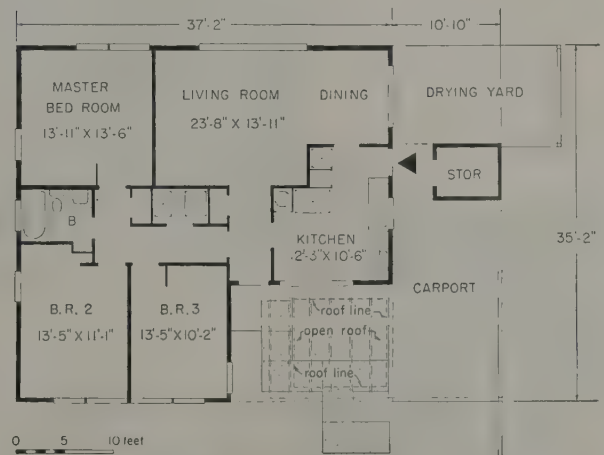


Front entrances (below) have adjacent planting beds and carports have outside storage rooms. Both exterior and interior color schemes were worked out by Basil O'Dell who controlled outside colors by fixing their sequence.

Photos: Photo Associates; Ulric Meisel



Living or dining area (above) usually faces the rear. Exteriors (above, left) are board-and-batten, plywood and batten, painted redwood horizontal or vertical siding, or shingles. Wide overhang and carport reduce air conditioning cost by shading windows.



Houses designed around cooling system

From their earliest inception, these houses were designed around the air conditioning plant. The builders, architect and engineers from the distributors of the air conditioning equipment worked together.

"This job was a pleasure to work on," said J. B. Lowe, president of Texas Distributors, who sold the equipment. "Usually we are called at the last minute and told to put in the system. This time we were in on the job from the beginning." Because nearly everything possible was done from a design point of view to help the air conditioning system, a 2 ton cooling unit was used instead of a 3 ton cooling unit which this size house would normally require. Not only was this a saving in original cost, but operating costs will be considerably cheaper.

As the design team analyzed the house they concluded that the first way they could lessen heat and cooling losses was to reduce outside wall and roof areas by making the house as nearly square as possible. The next point was to reduce the size of west windows where hot summer sun would penetrate. They wanted to eliminate all windows on the west but say that FHA and VA objected. To reduce sun load from the west they have planted shade trees that will eventually screen the windows. If they had been willing to be a little more radical the design team would have sealed all windows shut, on the assumption that as families get used to year round air conditioning they will leave windows closed as a cleanliness measure. This has been the experience of the owners of many large air conditioned houses. All windows are equipped with Venetian blinds.

Another design feature that reduces sun load is the wide overhang. The carport and, in some cases, an abbreviated front porch provide shade, too.

Insulation is also an important factor. Walls and ceilings are insulated with 4" of mineral wool batts. As an alternate the builders may use reflective aluminum foil on the theory that it will retain less heat during long hot spells.

The builders expect to lose very little summer cooling through the floor. On top of the 5" slab they laid 1" x 4" screeds in mastic. On top of the screeds they put red oak flooring. In kitchen and bath they used a plywood subfloor and linoleum or rubber tile. The dead air space around the screeds acts as insulation. Their engineers advised them that a slab floor would lose less summer cooling than an insulated wood floor over crawl space.

To bounce heat off the roof the builders are using white or light-colored marble chips, which materially reduces heat gain through the roof.

Cooling system is new version of old model

The cooling system is a General Electric 2 ton unit that is paired with a GE gas-fired furnace. Both use the same ducts. The cooling unit has been on the market about six months and is a slightly modified version of the firm's store and office cooler that has been on the market for ten years. This model was designed expressly for home use but in its basic operation is not new or experimental. It can be teamed up with other makes of hot air furnaces, either oil or gas fired.

An advantage this cooling unit has for areas that are both hot and humid is automatic "muggy weather" control. The operation of a room cooling thermostat causes a face damper to close and a by-pass to open. Thus the first stage of the cooling operation serves to remove more moisture than normal because the lower coil surface temperature condenses more moisture from the air passing over its surface. During the final stage of the cooling cycle the total unit capacity is lowered somewhat, and if the thermostat

senses the need for more cooling effect, the by-pass closes, the face damper opens and the full capacity of the unit becomes available.

Because the cooling unit and the furnace are designed to operate in parallel instead of in series, a considerable degree of flexibility in duct work results. Units can be spaced widely apart, or placed side by side. Because the air conditioner has its own fan, it operates independently of the heating unit. This means that it is not necessary to upset or rebalance heating air flows because of the addition of cooling to the heating system. The cooling unit occupies only 5.43 sq. ft. of floor space.

The heater-cooler, in a room at the center of the house, blows air through short ducts to wall outlets near the ceiling in each room. Return air is picked up at floor grilles on the far side of the room, and is brought back through cement ducts under the slab. This is a design that has been used successfully in a number of large houses in the area. Return air could be allowed to drift back through a hall. This would save about \$55 per house but would be considerably less efficient.

Capacity and cost

The calculated loads worked out by engineers for these houses are as follows:

Sensible cooling load	17,500 Btu/hr.
Latent cooling load	1,700 "
<hr/>	
Total cooling load	19,200 "
Total heating load	52,500 "

These calculations are based on maintaining indoor conditions of 80° dry bulb temperature, 50° relative humidity when outside conditions are 100° dry bulb, 78° wet bulb and upon maintaining an indoor temperature of 70° when the outside temperature is zero.

To handle the above loads the installed equipment has the following factory ratings:

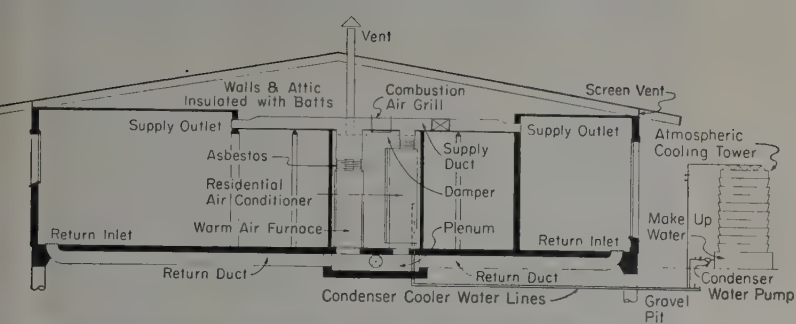
Air conditioning unit:

Sensible cooling	17,700 Btu/hr.
Latent cooling	6,900 "
<hr/>	
Total cooling	24,600 "
Furnace unit output	72,000 "

The installed cost to the builders of the two units is \$1,500. The cooling unit alone costs about \$1,000 which figure includes \$100 for plumbing and wiring, \$90 for a cooling tower and \$90 for a 1/4 h.p. pump.

Operating costs, based on engineers' estimates and field experience in Dallas during the past few years, are reported to be approximately \$140 annually. Cost of electricity (most of which is for the cooling unit) is \$93, gas for the heating unit will run to about \$40 a year. Water will cost about \$1 per month when the cooling unit is operating. (The unit re-uses 98% of the water, wastes almost none.) While the conservative figure on operating costs is \$140 a year, the actual experience in Dallas with central air conditioning systems in tight, well designed houses shows that the average monthly operating cost on a year round basis is less than \$4 per month per ton of installed air conditioning capacity. With this figure, annual operating costs for these houses may run around \$96 a year. In addition to these costs, however, a family has to pay a service man at least \$20 a year to switch over the system in the spring and fall, and to prepare it for operation. Servicing the first year is paid for by the builder.

If these figures are borne out, they should have considerable influence on FHA and VA as well as on other builders. It is reported that FHA frowned on year round air conditioning in build-



These 8" cement ducts under the 5" slab cost about \$55 per house. Short supply ducts run from center of house to each room.

ers' houses in another Texas city on the theory that operating costs would be so high buyers could not keep up the payments.

E. P. Lamberth believes that operating costs are going to be surprisingly low and that in addition, families living in these houses will pick up several budgetary by-products. They won't have to operate attic fans or the usual electric fans or window coolers. He is sure families will save quite a bit of money on summer entertainment as they will want to stay home rather than go out to air conditioned restaurants and theaters.

Builders subcontract most of work

Both Lewis & Lamberth and Laughlin & Silver work on an open shop basis. Lewis & Lamberth subcontract nearly everything, but keep several teams of carpenters for special work. Laughlin & Silver hire their carpenter labor direct, subcontract the balance. The air conditioning equipment is installed by the plumber.

Down payments on the houses amount to \$1,350 under the VA and \$2,900 under FHA. The first group of mortgages was sold by the American General Investment Co. of Dallas to Metropolitan Life Insurance Co.

At the opening on March 23 some 25,000 people saw the two model houses and lined up to go through a tent where the builders exhibited plans and various pieces of equipment, including cut-away models of the air conditioning machine.

It was the most successful opening that any of the four builders have ever had. They took down payments from 25 buyers and then gave up because of the crowds. "Even with the big down payments we're sure of our sales," said Lamberth. "In fact, we're tickled to death about the houses, and the public seems to be, too."

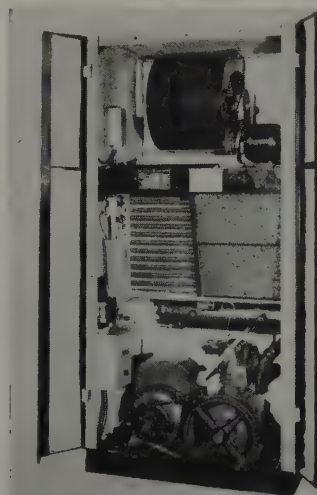
COST BREAKDOWN

Concrete work	1,200	Insulation	178
Lumber, doors, millwork ...	1,875	Venetian blinds	124
Windows	450	Mirror and miscellaneous ...	37
Labor	1,350	Grading, shrubs and trees ..	125
Hardware	100	Architect, engineering and	
Plumbing	900	decorating fees	100
Heating and air conditioning	1,550	FHA, VA, building permit	
Wiring and fixtures	265	fees	87
Flooring and floor finishing	450	Lot	1,250
Linoleum	39	General overhead, selling costs,	
Painting	600	financing, and profit	1,320
Built-up roof	360		
Bath, wainscoat and floor ..	140	Total	\$12,500

Thanks to the cooling tower, 98% of the cooling water is re-used. During summer season, cost of water is about \$1 per month. Redwood tower costs \$90.



Photograph above shows how cooler (at left) and heater are paired together. Cooler alone takes up 5.43 sq. ft. of floor space. Photo at right is Dallas installation, where both units are in a central closet. (Cooler is out of picture at left.) Below: cooling unit with machinery exposed, one filter removed.



GROSS-MORTON

SHOPPING CENTERS

**Some ABC's for homebuilders
interested in developing
their own commercial land.**

**THE TEACHER: a successful builder
who shares hard-learned know-how
gained from owning 138 stores**

Many U. S. homebuilders, usually alert to profit opportunities, are throwing one away—the commercial land which exists only because of their efforts. After literally creating whole new communities and rich, profitable markets, they are letting others lick the frosting off the cake.

Some builders are not so philanthropic—or shortsighted. Some appreciate that the increment in value of commercial sites properly belongs to them and is theirs for the taking. Long Island's Gross-Morton Co. understands this well. Where once they left the commercial facilities for their residential areas to chance, today their shopping centers are counted on to bring an additional 5-10% yearly profit on each area. What Gross-Morton have learned should be an object lesson to all builders. The lesson: shopping centers are a legitimate—and profitable—concern of the residential builder.

Alfred Gross: "The biggest mistake made by housebuilders is in not properly surveying the market. They don't know the answers they need to know about population, location, income potential and competition."

There was no guesswork when Gross-Morton built their 54 unit Glen Oaks shopping center in 1949-50, and 1951's 29 stores in Windsor Park. As a basic market for the first they had their own 3,000 garden apartments in Glen Oaks Village, with its 11,000 population. Aerial photographs, block-by-block house counts and traffic measurements helped Gross-Morton determine that they had no important competition for a market of 50,797 people, with over one million persons within 15 mins. of the center, by car. Figures like these are what attracted key retailers and a major department store, May's, the hub around which the center is planned.

Windsor Park's project is also in the center of 2,538 Gross-Morton apartments, but is planned on a smaller scale because it is not on a main traffic artery and because Fresh Meadows' center (with an important department store) is only 1½ mi. away. At Windsor Park the high volume "key" store is a supermarket.

George M. Gross: "Be sure your project is protected from others cashing in on what you build up. Don't leave 'coattails' hanging out for them to jump on. Zoning is one way, but it's undependable. Ownership, and/or occupancy, is best."



This second generation triumvirate runs Gross-Morton. Founded in 1896 by the late Max Gross, the firm is now headed by (l. to r.) Vice President Lawrence Morton, Vice President Alfred Gross and President George M. Gross. They own 138 stores in New York's Queens County, 93 in postwar shopping centers, the remainder in older retail districts. They have built over 15,000 houses and apartments, and fulfilled \$75 million in FIIA commitments.

Because builder Gross kept his shopping center away from the ends of Glen Oaks Village, he was able to bring a full block of apartments to each end of the stores. The land across the Turnpike had already been built up with single homes, except one piece owned by, and intended for use as, a church. Thus he was able to surround the center with a buffer zone on all four sides. Anyone planning more stores in the area will be a long way from May's department store, and Glen Oaks's parking lot. (Owners of a nearby center, who neglected this precaution, are now helplessly watching new blocks of stores go up around their development.)

Lawrence Morton: "Empty stores can murder you. They're the face of death at the feast. Plan your center in units, and build one at a time. It's better to have vacant land than a vacant store."

All three Glen Oaks units were built and rented singly. In fact, completion of the last building was deliberately delayed to keep pace with a temporary lull in renting demand. But because Gross-Morton controlled all the land, there was no hurry. The growth of the center could parallel the growth of the home area around it.

George Gross: "Today you have to sell your tenants. You'll find them reluctant to sign leases until the building is actually underway. And when you apply for a mortgage, the size of that mortgage will depend mainly on two things: 1) how much of the project is rented? and 2) what are the minimum rents?"

Gross-Morton had first made up an elaborate brochure, 18" x 22", consisting of architects' sketches of the center, site plans, a regional map (showing highways and transportation serving the stores, and the relation of Glen Oaks to the rest of Long Island) plus a detailed three-mile-circle map with accurate population figures. These went to all leading chain and independent stores, and brokers active in the field. After bagging key retailers like May's, Woolworth's and Whelan Drug, Gross-Morton could pick and choose tenants for the remaining space. (The drawing power of the department store permitted them to lease the supermarket space to a little-known chain at a higher percentage than the top supers would pay.)

Lawrence Morton: "You have to resign yourself to paying 10-20% extra for alterations after work is under-way. The cries for changes start even before the merchants sign the lease. Here is where the architect is all-important. He must be familiar with the changing needs and operations of the chains if he is to have any chance of keeping the alteration costs within bounds."

Architect Leo V. Berger is also consultant for May's and brought to the job 25 years of experience with both chain and independent operations. Berger was able to hold alteration expenses to 10% of the building costs because he is familiar with the ever increasing demands of retailers for more end-use facilities and equipment (supermarkets and five-&-tens both insist on lighting fixtures to their specifications, and the first often demand, and get, built-in refrigeration). What these extras can mean is illustrated by the super and five-&-ten building costs of \$15 to \$16 per sq. ft. (fire-proof construction in the New York area), as against \$12 per sq. ft. for the rest of the stores. Except for the steel framing, Gross-Morton were able to use the same subcontractors who were doing their apartments at the same time. Better utilization of both labor and materials was made easy by the fact that the projects were side by side.

Berger included two 50' malls to break up the 1,100' frontage and to furnish interior space for low volume "service stores." A 6' cornice gives shade and weather shelter, while soffit lighting (maintained by Gross-Morton) keeps every foot of the block bright and cheerful. Mall benches are handy for the foot-sore shopper, and the 25' sidewalks provide both for pedestrians and the "baby buggy brigade." Working with Berger was site planner Leo Novick, who was handed one of the key problems—parking.

Planner Novick: "Acreage alone will not solve the parking problem. Free traffic flow is the main consideration. If you design for a busy Friday night, you'll never have to worry about ordinary periods. Remember, many of your customers are poor car handlers, so don't skimp on center aisles and driveways. They need the room."

For their 185,000 sq. ft. of retail space, Gross-Morton provided 265,000 sq. ft. of parking, a 1½-to-1 ratio. In an endeavor to squeeze out even more space, Novick's planned concrete traffic islands were omitted, but painted lines failed to control haphazard parking so the 6" high islands were restored. Stalls are 18' deep, with 30' driveways, giving each bay a 66' width and making parking possible without backing and filling. Both Gross-

Morton and Novick would have preferred both front and rear parking, but zoning restrictions and demands of merchants for frontage on busy Union Turnpike forced all parking to the rear. Signs direct traffic to the side street entrances. (One Novick suggestion, dropped for space economy, was the planting of trees on traffic islands, which would have shaded the desert of concrete.)

Al Gross: "A shopping center is a speculation, a risk of your own. Until the building is up and the leases signed, there is no mortgage money. But if you control your own land, and are financially able, you should develop your shopping center as a lifetime income producer."

Lest anyone doubt Al Gross's insistence that shopping centers involve risk, Gross-Morton point out that on new leases, the lessor's percentage of gross volume has dropped an average of 33⅓% since 1947. Competition among the many new centers for tenants and the skidding retail profit margin have both contributed to this drop. Supermarkets, the hub of most small centers, will now pay only 1-1¼%, instead of a former 1½-2%. Big variety chains which used to pay 5 and 6%, now stop at 4%. To this must be added the increased facilities needed and the higher construction costs (with corresponding greater builder investment, for the mortgage is scaled to minimum rents, not costs). This trend is offset by the increase in dollar volume of most merchants.

Mortgage commitments will be roughly five to seven times the annual minimum rents, perhaps slightly more with a list of top-drawer stores. This gives an extra importance, beyond their customer pulling power, to securing the top chains. (Though the rental would be about the same as what their present tenant pays, Gross-Morton think today they would rather have a leading supermarket at a smaller percentage because of the extra people it would draw to the center.)

Al Gross: "Merchants are all alike, from Macy's to a neighborhood shoemaker. Each will insist that his rent should be lower because of all the people he is going to pull to your other stores (whose percentage will be higher, of course.) But if you don't get your return from the department store, if you don't get it from the supermarket, if you don't get it from the five-&-ten, who do you get it from—the barber?"



This aerial view shows how Gross-Morton were able to surround their shopping center with residential land as a buffer. Large vacant sites shown will be churches.



WHY AND HOW THE FURNISHED MODEL HELPS SELL BUILDER'S HOUSES

Why decorate?

More and more builders are using the furnished model house as a sales tool. Why? They find it is cheap advertising, creates good will by giving customers new ideas. They say good decorating hides shortcomings, makes small rooms look bigger, any room look better.

Several have found it worth while to "move the furniture from one house to another. First it sells the model, then it sells the one exactly like it down the road."

One says that customers "know the 12' x 20' living room is there all right, but wonder will the big sofa fit next to the fireplace?"

Another admitted that his decorator so enhanced the looks of his house that he "revised the price upwards."

Still, most builders are not getting full value out of the money they invest in furnishings.

Say builders

Carl Freeman: "Model houses bring large numbers of people to the property. Visitors in a properly presented model are relaxed, interested and communicative."

Joseph Eichler: "We've just proved again that a furnished model is the way to sell houses—this time in a subdivision of 16 houses, five different plans, priced from \$17,500 to \$22,000. The plan with the furnished model, though less suitable to the average family's needs, sold first. The best plan did not sell unfurnished; when furnished, we sold it within two days. . ."

Newell & Daniel: "We are sure decorating helps sell the house—the model with the furniture in it always sells first."

Jo Shapiro (Joseph-Martin Assoc.): "Anyone who builds even five houses a year should have a furnished model. The model makes sales faster, which in the long run is enough economy to cover the cost of furnishings."

Sam Levin (Hillside Terrace): "We once had a house with no model, and it went very slowly. . . It pays over and over to have a good decorator and pay for her services."

Stackler & Frank: "We wouldn't do a development without a model—and any builder who does is missing a good merchandising technique. . . Decorating should play up the house, not the furniture."

Virginia B. Hall (Danherst Corp.): "Our own sales center will have one house furnished in modern, one traditional—not only to appeal to varied tastes, but also to demonstrate the versatility of the Gunnison home."

Sidney Roth: "One psychological value of the furnished model is that it makes a woman start furnishing in her own mind. Before long, she's ready to make the move and see for herself how her ideas look."

Harold Lewis: "Our new Long Island development, North Woodmere Park, will have about 130 houses. In three or four weeks, we've sold about 25 houses from two models—the decorators dramatized the best points of the houses."

Walter Driver (Driver Construction Co.): "The furnished model pulls far more people than an empty house . . . but gets maximum results only if it is in the price and style bracket leading the field to begin with. . . The model simplifies customer color selection—which can be a big headache. . . Here in the Southwest, we find new homeowners are overwhelmingly in favor of modern furniture."

Photos: Damora



To give model house lived-in look, New Design Inc. stresses accessories, curtains wide windows with nylon (opposite) and split bamboo (above). Dining table was produced by Knoll Associates from Nakashima model.

How to make it pay

It is not hard for a builder to pay his money and get his house filled with furniture. But to get sales results calls for considerably more—some of it well in advance:

▶ A good floor plan (Oct. issue '51) without doors and windows in the walls most obviously suitable for sofas and beds is appreciated by the decorator as well as by the housewife. Decorating demonstrates exactly how the house will look when it's lived in.

▶ The decorating job must be expert. Since neither the builder, nor his wife is usually qualified, and as a small discount, if any, is apt to be given by big stores, it pays to find a competent interior designer or assign the job to the architect. (Less furniture is better than less taste in its selection.)

▶ There must be ample planning time. No interior designer can produce top results for the builder who rushes in and announces that the house must be ready in two weeks.

California builder Joseph Eichler moves furniture from one house, as it is sold, into next (right).

Beatrice West emphasizes dual purpose at Levittown (smaller photo) with coffee table that rises to card height.

What cost decoration?

While occasionally a department or furniture store will do a job for publicity (national magazine tie-up preferred), nine times out of ten the best the builder can hope for is a discount. Sometimes a small firm will supply furnishings at cost plus a fee to cover operating expenses; more often, the price is closer straight retail. Few decorators will touch even a low priced house for less than \$2,000.

Several color stylist-decorators offer builders a service stressing exterior and interior color selection. Probably the best known is Beatrice West, who has done more than 64,000 houses in 29 states for 165 builders (Levitt among them) and proved conclusively that good color is the cheapest, surest way to side-step monotony and add to the sales appeal of the tract house. She plans color schemes "from the outside in and from the roof down," works out the minimum number of colors for the maximum number of color combinations.

The cost of such services varies with the number, size and price of the houses: for a minimum of 100 small houses, \$10 per exterior and \$5 per interior. Fewer and larger more expensive houses cost more.

To furnish a model house, Miss West charges an additional fee for traveling and working time, size of house and several other factors. She pays careful attention to the pocketbook of the average prospective owner (furnishings for a small Levitt model came to under \$1,000). "You have to make a woman feel that she can afford to get the same effect. Otherwise, she's scared away because she thinks the house won't look as nice with what she can afford," says Miss West.

Of the builders who operate as their own decorators, Joseph Eichler has worked out an unusually simple and successful system. He has bought a few good, modern basic pieces (beds, sectional sofa, dining table and chairs), which together with built-ins suggest the real livability of his houses. He moves the furniture from one house to another; except in the original model, spends *no* money on curtains—instead, he tacks up a fabric sample to suggest pattern and color ideas.

In Las Vegas, Nev. an enterprising Sears-Roebuck salesman, Ed Frietas, realized that furniture and house sales problems dovetailed: he could use an outside hook to bring customers into the store; a builder could use evidence that furnishings could be bought on a budget. A developer listened to the Frietas plan, liked it, and has put it to work to their mutual advantage.

Each purchaser of a house, and each good prospect, gets a copy of the floor plan with furniture drawn in to scale, together with three cost lists itemizing the furniture piece by piece and room by room, on a sliding scale of quality. Most expensive furniture set-up comes to \$1,827; middle range \$1,468; cheapest \$1,211. Customers can juggle budgets to suit themselves. (Neither store nor builder spent a penny on actual decoration.) Result, after just two weeks: Frietas had furnished three houses and the builder had made four house sales.



Rondal Partridge



Rav Jacobs Studio

How to decorate: 10 pointers

1. Simple modern furniture, of light woods, gives a cleaner, more open effect than does traditional in dark finishes.
2. Small-scale furniture makes a room look bigger.
3. Double-duty furniture cuts down on the number of pieces needed, saves both money and floor space.
4. Decoration can prove how multipurpose rooms work, show how the guest room can also be used for TV, for instance.
5. Built-ins look neat and save space. Their cost to the builder whose carpenter is on the job is comparatively small.
6. Skillfully arranged furniture may divide a long, narrow living-dining room, create the illusion of better proportions.
7. Patterned wallpaper helps fill up a sparsely furnished room but different patterns in adjoining rooms make a house look restless and seem smaller.
8. Good color costs no more than bad, outdoors and in.
9. For a small house, one basic color carried throughout is better than a hodgepodge of exuberant variety. Fabrics may supply accent colors.
10. It pays to respect regional differences. A modern house in a Colonial neighborhood can do with a few old prints.



Photos: Ben Schnall



Subdued pattern, and peripheral arrangement of Jens Risom living room furniture (top) and built-in dining area cabinets (above) gain expansiveness in builder house rooms by Designs for Business Inc.

Sales psychology

Being human, home seekers are strongly and subtly influenced by human factors; builders being merchants are quick to see what draws crowds and gets their money:

► "Women immediately put themselves in the place of the decorator," says one builder. "And the minute a woman starts comparing and deciding where she would put her furniture, it's practically a closed sale."

► People stay in a furnished model house longer, feel more at home, are more relaxed, interested and conversational. There's more to talk about—more on which to pin a sale.

► Conversely, a model saves the salesman's time because he doesn't have to prove that the bed or sofa will fit the wall space.

► Chances of publicity are better. "Nobody's going to take a picture of an empty room," is the way most builders sum this up.

► It's difficult for a layman to visualize a finished, furnished room. Besides, everyone appreciates being given ideas.

► For many builders there's too much gamble to building a number of houses in advance of sales; a model makes it easy to sign up customers ahead, be sure subsequent houses will sell.

► Imaginative decorating is a distinguishing factor. House hunters who have gone from one \$12,990 house to another—and another—may end up in complete confusion, except when a furnished house makes a lasting impression. That's the one they'll buy.

**Have you tried
furnishing a model house?**

**If so, how did it work
as a selling tool?**

**Who did the job for you,
a professional decorator, a store?**

**How much did it cost
and how did you finance it?**

HOUSE & HOME would like to see any pictures you had taken and to know what the public reaction was to any decorating jobs you have had done, with a view to publishing them in a future decorating roundup.

A STRONGER, CHEAPER STORAGE WALL is engineered at University of Illinois

A new kind of storage wall that every builder can make for himself has just been developed by the Small Homes Council at the University of Illinois. Sponsor was the Lumber Dealers Research Council.

The rear panel is made from a 4' x 8' sheet of $\frac{3}{8}$ " plasterboard which is glued with linoleum paste to a sheet of $\frac{1}{8}$ " untempered hardboard. Sides, divider panel and shelf are $\frac{1}{8}$ " hardboard.

▶ The new closet wall is 20% cheaper than conventional stud wall closets. Materials and methods are common to builders and present no problems.

▶ Cabinets have full-access fronts, more interior space than thick-walled closets, waste less room space.

▶ The panel forming the back was judged the best of 22 experimental panels tested by the University.

▶ Although rear and side panels are thin, they are combined to afford three-way stiffening that gives storage wall great strength and rigidity.

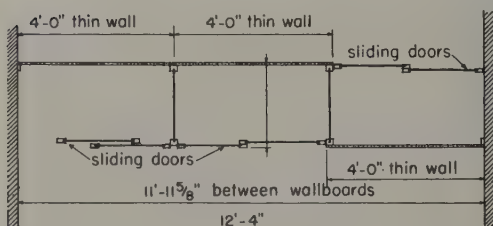
▶ Panels can be made and assembled on the job.

▶ A variety of fronts may be used to suit the builder's discretion.

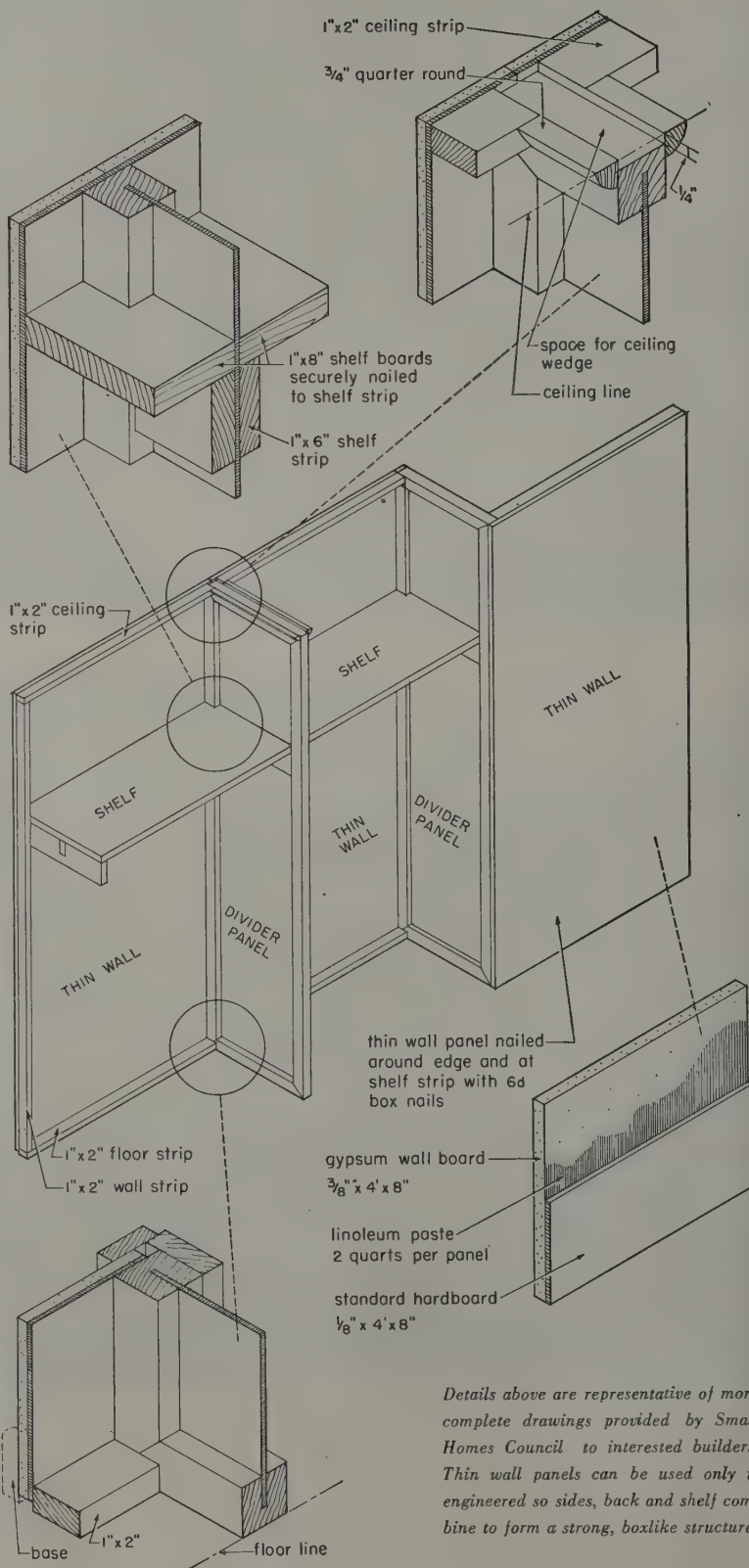
Although only $\frac{1}{2}$ " thick, the rear panel withstood drop and deflection tests which proved it had unusual strength. While a 60 lb. sandbag dropped from 4" broke through a panel made of plasterboard, a 4' drop of the same sandbag did not damage the laminated panel.

Entire design is engineered so that rear panels, two sides and shelf are combined to give a box type, three-way stiffening which permits cheaper, thinner panels than if normal construction were used.

The new storage wall was presented to builders at a two-day course held by the Small Homes Council. The truss on the next page was also shown. Builders can get full details by writing the Small Homes Council, Urbana, Ill.



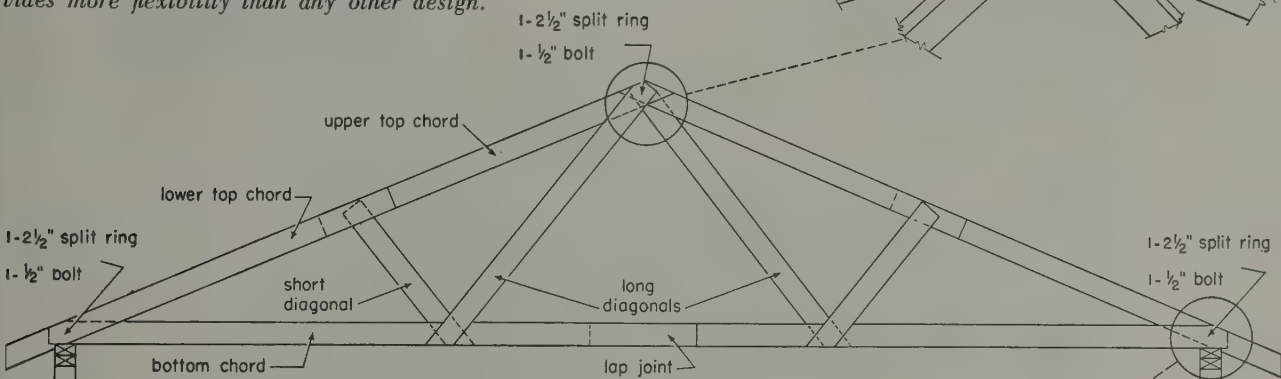
Rear panels use full width and height of 4' x 8' sheets, involve no cutting. Sides are $\frac{1}{2}$ " sheet of hardboard.



Details above are representative of more complete drawings provided by Small Homes Council to interested builders. Thin wall panels can be used only if engineered so sides, back and shelf combine to form a strong, boxlike structure.

NEW W-TRUSS HAS GREAT FLEXIBILITY spans 20' through 32', with or without attic storage

After several years of experimentation, University of Illinois engineers have come up with an improved truss which they claim is easier to make, faster to assemble, stronger, and provides more flexibility than any other design.



A great deal of engineering skill went into this truss. One carpenter and a helper can precut, bore and preassemble the four part unit (upper right) needed for all trusses for a 1,000 sq. ft. house in one working day.

The same design can be used for spans that range from 20'-8" to 32'-8". One series is for houses that use attic storage, another for houses without storage. Each of the three main truss members contains one lap splice. This allows the use of ring connectors at the three major joints without the close tolerances that would otherwise be required.

The lap-splice design permits the truss to be adjusted in span and to be laid up without splice plates, gussets or filler blocks. Another advantage is that a major subassembly (detail at upper right) can be made and stored or transported in a minimum space. Final assembly may be quickly completed on the job site.

The W-truss (25'-8" span) was designed for one size of lumber (2" x 4") and only five lengths are used. Material must be 1,100 psi stress grade or better, equivalent to Coastal Region Douglas Fir #2. There are no left or right members to confuse the carpenters. Jigs are easy to make and directions provided by the Small Homes Council give all necessary information for making them.

University engineers who designed the truss state that the tension quality of toe-nailing is so unpredictable it is valueless. For that reason the trusses were designed to be fastened to wall plates with light metal framing anchors which make toe-nailing unnecessary and load the nail in shear rather than tension.

The new trusses were designed for a slope of 5-in-12 and are to be spaced 24" on center. If used for slopes that vary considerably from 5-in-12, they must be redesigned. The use of ring connectors is a vital part of the design. Overhangs up to 30" can be used by extending the top chord.



This is the demonstration jig shown to builders who attended the University's short course on construction techniques. Simplicity permits fast assembly of precut members.

What future for the sewerless toilet?

In March HOUSE & HOME reported a revolutionary new plumbing system: the sewerless toilet (p. 110).

Its future may depend on answers to two questions:

1. Will the sewerless toilet operate as smoothly as inventor Carl Boester says tests at Purdue indicate?
2. What acceptance can its developers expect for it?

BECAUSE of the newness of Boester's invention, the final score on the first question cannot be tallied yet. However, Oklahoma City builder Bill Atkinson, who has been testing it for 30 days in his factory, believes results will be satisfactory. "If it works out it would be the answer to our prayers. It will save very extensive sewer plant installations. In areas where septic tanks won't work, the only alternative up to now has been to put in a central sewage disposal plant which is terribly expensive." Results have been very good "with the heavy load we're putting on it." His tests should help to resolve such possible drawbacks as these:

"Additional research will need to be done to facilitate the removal of foreign materials which occasionally drop into the toilet." (Leon Raider, Builders Division, Raymond Rosen & Co.)

"As the device must operate continuously, the noise level created by the continuous rushing of water into the bowl may be great enough to be objectionable." (Harry J. Taillié, Rochester Gas & Electric Corp.)

"The question that arises, pointed out by Boester, is what can be done with other waste water, such as laundry and kitchen wastes." (Earl W. Smith, President, Earl W. Smith Organization)

"What happens in the event of power failure?" (Curt C. Mack, Assistant FHA Commissioner for Underwriting)

"If the water that is being constantly recirculated should become discolored or dirty, this probably would be objectionable." (Harry J. Taillié, Rochester Gas & Electric Corp.)

"Some of the public health people are inclined to think that the cost of power may be a [determining] factor." (Curt C. Mack)

There is a general agreement that the sewerless toilet would need to be thoroughly proved by actual practice in the home.

"Though I attribute amazing possibilities to the sewerless toilet my company believes that it will have to be tried out for three or four years before it can be adopted." (Richard Geiger, Spiegel Construction Co.)

Another stumbling block gloomily brought up over and over again is how difficult it will probably be to get official approval for this system.

"In practice, the central FHA office seldom tells local insuring offices what new products they can or cannot use. However, it advises them when they seek guidance. It is possible that eventually some offices will accept this new type of toilet while others will say no. In general, FHA policy would be to prohibit its use in areas where community sewage systems exist." (Curt C. Mack)

"We find that FHA and VA are relatively receptive to new ideas but real difficulties may develop with local municipalities." (Richard Geiger)

"I have had so much trouble overcoming local codes that I cannot imagine Boester's invention will be immediately available." (Charles Goodman, architect)

That VA authorities may take an open-minded view of the sewerless toilet is indicated by the reaction of Bert King of the loan guarantee section of that agency. He is enthusiastic about its possibilities. "If it measures up to claims, it will be just the answer technicians have been looking for in respect to sanitation facilities in areas where septic tanks are not feasible." Builders were delighted with certain specific savings which they foresee:

"Naturally, one must approve of any machine or method which conserves our natural resources, and since this toilet uses the same water over and over again, it deserves approval from that point of view." (B. M. Garland, James B. Glow & Sons)

"The economy of installation and of operation is of interest in the economy house field." (James M. Albert, Albert Construction Co.)

"It would create a great saving of critical metals." (B. M. Garland)

"I venture to say that in most areas of the country it would increase the usable land by at least five times. The saving in cost would certainly amount to at least \$500 per unit, if we consider the cost of main sewer installations. There would also be a saving in the time element of construction." (L. Robert Rolde, Mortgage, Land Developments)

"It would seem that the system could be very well utilized wherever economical sewage disposal is needed, such as in temporary living units, trailers, airlines, trains, etc. Certainly this is a great improvement over the use of septic tanks." (The D. C. Burns Realty & Trust Co.)

But the greatest enthusiasm for the sewerless toilet was generated by the hope that it will open up land to builders which they have been unable to use up to now.

"There are many sections of Long Island that do not have sewage facilities and where a high-water table makes it impossible to build them satisfactorily."

"The sewerless toilet will help here and also in areas where there is no public water disposal system as it will make it possible for the homeowner to have a private water system without fear of contamination from sewage waste. This new toilet should also be a boon to many defense areas where water and sewage are not available." (Leonard L. Frank, Stackler & Frank)

"If the claims made by Carl Boester are substantiated by further research and field study, I think that the sewerless toilet will find immediate acceptance and open up areas for development hitherto unusable, because of improper or unsatisfactory soil conditions." (Emanuel M. Spiegel, First Vice President, NAHB)

The sewerless toilet may contribute to greater flexibility of the plan of the house and the relation of house to land.

"Assuming that this toilet is mechanically right (and I assume it is) and that the sink and other waste sources of the house can be taken care of, I see a great many possibilities for flexibility in three different ways:

1. Flexibility of position for the toilet within the house itself, making possible a greater variety of floor plans.
2. Flexibility of location for the house on the ground—at present houses have to be located for short sewer connections.
3. Flexibility in using houses in temporary locations or in locations otherwise unavailable." (John Highland, architect)

**you'll like
to do
business
with . . .**

your nearby RO-WAY distributor



**RO-WAY
door features**

You'll like the intelligent service he gives you.

You'll like his helpful spirit, and the pride he shares with you in doing every job right.

You'll like the way his "know-how" saves your time.

You'll appreciate his experience and care in helping you select the right size and type of Ro-Way Door for the appearance and service requirements of each particular job.

You'll like the painstaking way he looks after all the details of installation to make sure both you and your customer are happy.

include—Springs power-metered to the weight of each door; ball bearing rollers with double-thick tread; all hardware Parkerized and painted after fabrication . . .

—and BRAND NEW
for complete protection against weather

TAPER-TITE CLOSURE. Vertical track angled away from jambs. As door closes it automatically fits tightly against jamb and is held there snugly.

SEAL-A-MATIC HINGES—graduated in height provide perfect opening and closing in connection with the TAPER-TITE CLOSURE.

**So get in touch with the RO-WAY
Distributor first on every job**



Remember, he is an important part of a nationwide network of selected sales and installation engineers. See the wide choice Ro-Way offers in standard and special garage door sizes and styles for practically every Residential, Industrial and Commercial need.

Consult your classified telephone directory or write for name and address of your nearby Ro-Way Distributor. You'll like to do business with him . . . and with us.

there's a Ro-Way for every Doorway!

ROWE MANUFACTURING CO., 997 HOLTON ST., GALESBURG, ILL.

Rō-Way
**OVERHEAD TYPE
DOORS**





HOME FINANCING and "HOME-SECURITY" *Go hand in hand!*

Executives of home financing firms agree that it is simply GOOD BUSINESS to have an added source of funds to tap when a health condition prevents a borrower from working.

An up-to-date study of "Home-Security" indemnity statistics reveals these important facts:

During a 36-months period a mortgagee is exposed to having 22.32% of its borrowers disabled for more than 14 days. Of this group, 55.38% are disabled for more than 30 days and 20.66% are disabled for more than 90 days.

This study also demonstrates how the "Home-Security" monthly indemnity automatically collected from the Woodmen Accident Company and applied by the mortgagee or correspondent to the monthly home loan installment, has prevented "slow down in collections" and delinquencies.

"Home-Security" franchises are immediately available to qualified firms in the Midwest and Southwest. If your home financing firm is not now offering "Home-Security" service, information may be obtained by writing to

H. A. Atkinson, Director
HOME-SECURITY DEPARTMENT

WOODMEN ACCIDENT COMPANY

TIME-TESTED PROTECTION SINCE 1890

HOME OFFICE • LINCOLN, NEBRASKA

WHITE HOUSE REMODELING

(Continued from page 113)

required careful planning of structure, ducts and wiring. To avoid future tearing up of floors and walls, all plumbing pipe is durable red brass (including a separate chilled water system for drinking fountains on all floors) and conduits for possible future wiring have already been laid so that new wires can be pulled through them when the need arises. The present electrical system includes a fire-alarm and watchman's report network, intercom telephones, radio and TV system. The electrical contract amounted to a resounding 15% of the entire appropriation.

Furniture and decoration were the responsibility of Charles Haight of B. Altman & Co., New York, under the eye of consultant William Adams Delano of the New York architectural firm of Delano & Aldrich. Total cost of buying new pieces—chiefly for the second and third floor living quarters—and reconditioning old ones ran to roughly \$200,000. The underlying idea of the re-decoration was to restore as much as possible of the detailing from the hodgepodge of Italian, French Renaissance and other styles to the original Georgian, with a few excusable contemporary touches. Among other details, the State Dining Room, formerly dark with the oak paneling of the T. R. era, is now painted a grayer pastel green,* and new paneling has been made for some of the ground floor rooms from old pine joists ripped out during reconstruction. Such work as parquet flooring and ornamental plaster netted few bids, were slow and expensive.

By special act of Congress, much of the debris behind the walls went to souvenir hunters: the Commission did a brisk business mailing out 13 "kits," ranging from a foot-long piece of lath for 25¢ to a ton of bricks or stone ("enough to build your own fireplace") for \$100. Interest was varied: several letters asked for "President Grant's bathtub, express collect, please"; one youngster wrote, enclosing a quarter "Please send me the White House."

Probably the one item that has aroused more interest, and erroneous speculation, than any other is the bomb shelter. The Secret Service, quite understandably, won't talk about it, not even to confirm or deny the cumulative picture of it that has appeared in the press over the past two years. This much, culled from press accounts, seems reasonably wellfounded: it is either a new shelter or more probably a refurbished version of the one built hastily by President Roosevelt in 1942. Actually not a part of the renovation project, it was built with an \$881,000 allocation from President Truman's special funds. Equipment: concrete walls 9' thick, double steel doors, auxiliary telephone switchboard and radio, cooking and sleeping facilities, medical supplies, a ventilating system which protects against both poison gas and radioactive dust particles. Exact location is secret.

With the return of the President from Key West late last month the most closely watched remodeling job in American history was over. Most of the sidewalk superintendents will probably be satisfied with the result, with the possible exception of Bess Truman, who reportedly had been living in dread of the day she'd have to move back into a "museum" again. Apparently she would prefer more secluded living quarters to the fishbowl existence on Pennsylvania Ave. "I can't slip on a kimono and go across the hall to see Harry and Margaret," she was heard to say recently. "There just isn't any privacy at all."

* A big paint company, through a succession of 5%-ers, offered to provide all the paint for the White House free in return for permission to publicize the fact. But, in accord with the Commission's policy against commercialization of any products used, the mansion was decorated with unadvertised, paid-for paint.

ANOTHER AMERICAN HOUSES' FIRST!

In its new '52 SERIES of houses, American is now first to apply new engineering ideas that add an additional 5% more usable floor space in low-cost houses without increasing costs.



LOOK TO AMERICAN HOUSES, INC. FOR

Leadership

IN PREFABRICATION



FIRST to apply prefabrication to the construction of high-priced luxury houses.



FIRST to apply prefabrication to the construction of two-story buildings.



FIRST to apply prefabrication to the construction of large apartment projects.

Architectural and engineering research in design and use of materials is the primary reason for American Houses' pre-eminent position in the field of prefabrication. The company's achievements have contributed much to the wide acceptance of this efficient modern method of construction by builders, realtors, mortgagees, government agencies, building officials and the home-buying public.

American Houses, Inc. was the first to attain a maximum of flexibility which meets all market demands for size, variation and price range. American was the first manufacturer to apply prefabrication to the construction of high-cost luxury homes. First to apply prefabrication to the construction of two-story buildings—to apartment projects.

To see a house in the new '52 Series is to understand what American's research has meant to low-cost housing and to visualize how American's system speeds construction and reduces erection and maintenance costs; provides more living space, comfort and conveniences in houses soundly constructed of quality materials.

What about the future? Will the house of 1953 contain a different type floor—or roof—or exterior wall—new types that not only lower costs and speed construction but also add to its quality, comfort and beauty? American Houses' research program is working right now to accomplish just that.

If American Houses' approach to housing and housing research appeals to you, write today for complete information. Address Dept. HH-4.

AMERICAN HOUSES, INC.

165 West 46th Street • New York 36, N. Y.

PLANTS: ALLENTOWN, PA. LUMBERTON, N. C. COOKEVILLE, TENN.

Take a look at **AZROCK** for '52!

TAKE A QUICK LOOK

at AZROCK's New Color Line for '52! Spread out the colors and compare them with any other asphalt tile color line. See how color for color AZROCK is brighter, cleaner, more attractive. These colors will help you satisfy your clients more completely.

TAKE A CRITICAL LOOK

— like your clients do. AZROCK colors are designed to give the architect a completely balanced line of colors so that he can design interiors of greater architectural perfection.

TAKE A LONG LOOK

at the physical characteristics of these new color samples. Note the smooth surface, the attractive marbleizing, and the sharp, precise dimensions. They all contribute to the AZROCK reputation for performance!

*Write today for your copy of the
1952 Azrock Color Chart.*



UVALDE ROCK ASPHALT CO.

FROST BANK BUILDING

SAN ANTONIO, TEXAS



Makers of ...

AZROCK Asphalt Tile
AZPHLEX Thermoplastic Tile
VINA-LUX Reinforced Vinyl Tile

"AZROCK Makes Fine Floors"

REVIEWS

HOW TO BEAUTIFY YOUR HOME WITH COLOR. By Paul Hartley, McGraw-Hill Book Co., Inc., Trade Dept. 330 W. 42d St., New York 18, N. Y. 80 pp. 7½ x 10". Illus. \$3.50

If Dr. Kinsey ever analyzes color habits (not preferences which are often polled) he probably will find the range from repression flamboyance dovetails with his earlier study. Few interests are as intensely personal as color. While Hartley's book is hardly Freudian, it does attempt to release the color consumer's inhibitions through a brief education, explaining warm (yellow cast) and cool (blue cast) tones and giving him a few rigid standards on how to use them "in good taste." To assure "correct" selection of furnishings and accessories, the book provides two sets of colored tabs—one in each temperature—for the reader's reference while shopping. If the reader will take the first four rule-book chapters with a grain of cobalt, he will find some excellent color-decorating suggestions in the rest of the book on how to make a room (or house) seem warmer, cooler, larger, smaller, higher, lower, exciting or restful. Except for an occasional pantheist outburst ("if you could somehow hand-paint your low ceiling with simulated cumulus clouds, swimming in a bright blue sky, this would be best of all") *How to Beautify Your Home with Color* does hold good advice for the color novice—homeowner or homebuilder. A general point worth noting is the author's suggestion to neutralize colors (gray them with their opposites) for livability. But such dogma as "place a warm color with a cool color and you have discord" is hot and cold nonsense. This is the stuff that horse races are made of.

HOW TO WATERPROOF YOUR BASEMENT for as little as \$10. By George A. O'Brien, Greenberg Publishers, New York, N. Y., 116 pp. 5½ x 8¼". Illus. \$2.00

Homebuilders would ordinarily write, not read, "how to" books, but with damp and flooded basements a chronic source of complaints to FHA, VA and builders' associations, this simple treatise on the causes and cures of below-grade problems should be a welcome supplement to many builders' libraries.

Though written for the general public, with attendant oversimplification, the book is no stranger to the problems of the large scale builder. Example: "The cry of wet cellars always brings panic to the hearts of builders in partially sold developments." The author separates his material almost equally between how to determine the exact cause of the trouble and the step-by-step cure of the ill.

Mr. O'Brien is a waterproofing consultant to both builders and architects and demonstrates a thorough knowledge of hydrostatic pressure and the porosity of building materials. Troublesome basements occasionally plague every builder, and this volume could be a "friend in need."



What's BETTER About Curtis New Londoner All-Wood Hollow-Core Flush Doors . . .

Superior beauty—just as in the finest furniture, the wood grain figures of Curtis New Londoner flush doors are *matched* carefully to provide balanced, harmonized patterns. Doors are sanded with fine sandpaper for quick, easy finishing. Available in birch, maple, oak, and other woods.

Patented locked wood grid—made of precision milled, meshed and interlocked horizontal and vertical pine strips. Grid is firmly “welded” to both faces—no “floating” units.

Specially bonded faces—water-resistant bonds which stay tight under high humidity conditions. Bonding for exterior doors fully waterproofed.

A door that stays true—all Curtis New Londoner flush doors are kiln dried—then sealed against atmospheric changes. All interior structural strain is eliminated.

Sturdiness proved in over 4,000,000 installations—established reputation for quality with architects, builders and home owners.

Several choices of light openings are available.

Extremely easy to hang and finish—a popular feature with carpenters.

Both ends of doors branded with Curtis New Londoner name for easy identification.

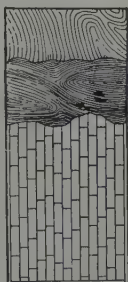
Curtis Plyoneer Hollow-Core Flush Doors

These Curtis doors have the same high quality construction as the Curtis New Londoner hollow-core door, except that faces are not matched-grain.



Curtis American Solid-Core Flush Doors

The same inherent quality found in Curtis New Londoner hollow-core doors is available in Curtis American solid-core flush doors. These doors have a kiln dried core and are edged with hardwood strips all around. Face panels are phenolic bonded. Available in extra widths for school, hospital and institutional use.



CURTIS COMPANIES SERVICE BUREAU

MB4 Curtis Building • Clinton, Iowa

I want to know more about Curtis New Londoner and Curtis American flush doors. Please send me complete information.

NAME.....

ADDRESS.....

CITY.....

STATE.....

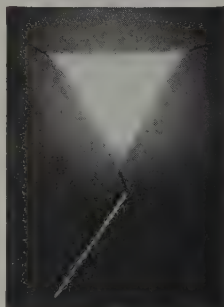
PRODUCT NEWS

New lamps from old worlds

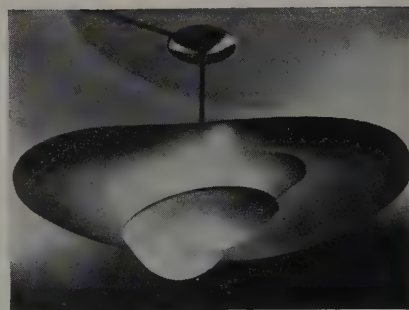
Los Angeles-born Noguchi and Italian designer Sarfati are about as far apart in their lighting concepts as in geographic origins. Their lamps, introduced together by Lightolier, are an intriguing study in contrasts.

The American-Japanese master of free form has three new light-sculptures in the group plus his familiar oiled-paper box kites. (Macy's New York recently launched the last on the retail market with an incense-perfumed newspaper ad.) His feeling for light as "textured illumination" is personified in the new pieces. Although the combinations of materials differ in each fixture, the lamps all accent their visible light sources while the softer, left-over illumination plays around them.

Many find Noguchi's work exhilarating; others see it as amusing symbolism. Most observers will agree this batch is warm and pleasant. To some the lamps might vie with TV in the race to replace the fire on the hearth.



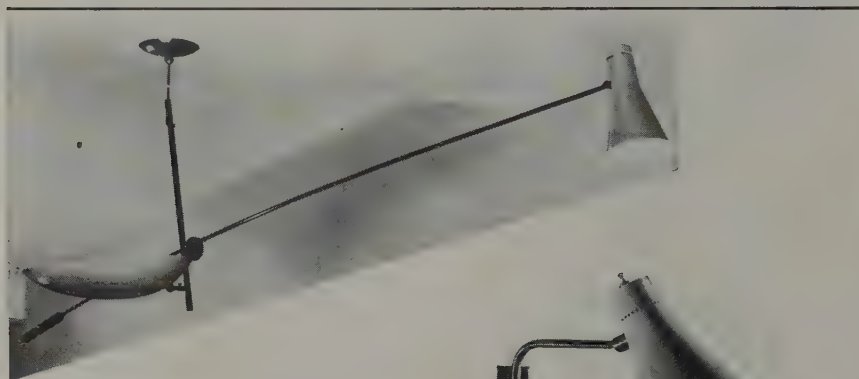
A soft-curve plastic prism which may be wall hung or set on a table, this light fixture retails for \$57.50.



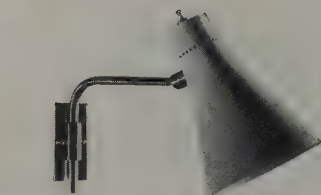
Several spray coats of cellulose acetate plastic over muslin fabric form the basket on the ceiling fixture which nests the light bulb. The top shape is cut plywood painted mustard.

At left, Isamu and his gentle box kite lamp

Mobile of wood sculptures (below) is suspended on wire from the sensuous bas relief. The plaque is made of plaster reinforced with jute fibers applied over a wire form. Price, \$115.

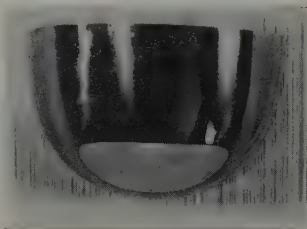


Above, \$150 Chartreuse and blue fish pole and bucket ceiling fixture. Below, a pair of directional lamps with fuchsia and charcoal metal bonnets priced at \$79.50.



The little lamp above has a circlet of pin holes in its bright white shade. It costs \$19.50.

The polished brass pocket is designed to cast light down and up.



And in the other corner

Sarfati is producing lamps like these at left. With Latin grace he has taken some mechanical lighting clichés and given them fresh appeal with his use of gay color over suave forms. Rich brass shafts (unfortunately used here far less frequently than polished chrome and anodized aluminum) complement the hoods which are enameled in magenta, ochre, blue and charcoal.

Demure in scale, the lamps are suitable for small rooms. Prices on the fixtures pictured range from \$19.50 to \$150. Only in one ceiling fixture, a 9' fishing rod and bucket, did the designer let his romantic interest in gadgetry get the better of him. *Manufacturer: Lightolier, Inc., 11 E. 36 St., New York, N. Y.*

(Continued on page 154)



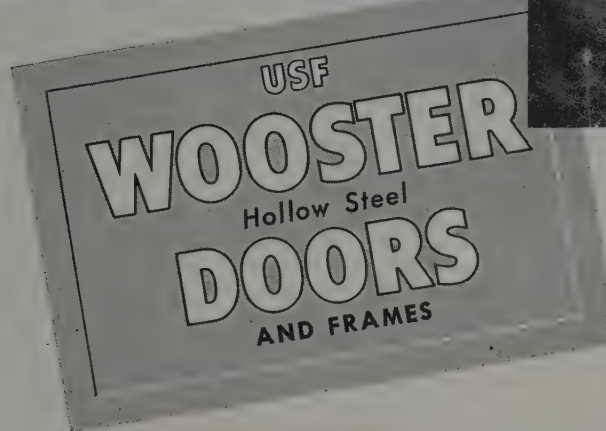


*Featured in America's
Finest
Multiple Dwellings*

KENILWORTH APTS., PITTSBURGH, PA.
10 STORIES—136 UNITS



Constructed and Managed by—BEHRMAN & PASSELL
Architect—TENNYSON & VAN WART



A growing feature of modern residential building is the specification of USF "Wooster" Hollow Steel Doors and frames throughout. This typical installation, The Kennilworth in Pittsburgh, reflects the trend by featuring Wooster Doors and Frames at all corridor entrances, all interior doors, and also in sliding closet doors.

- FIRST to obtain the UL Class B Label on 1 $\frac{3}{8}$ " doors
- FIRST to meet A.S.T.M.—1 $\frac{1}{2}$ hour fire test on 1 $\frac{3}{8}$ " doors

United Steel Fabricators INC.
WOOSTER, OHIO

Manufacturers of: Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Walls • Highway Guard Rail • Structural Plate Bridge Flooring • Corrugated Metal Pipe



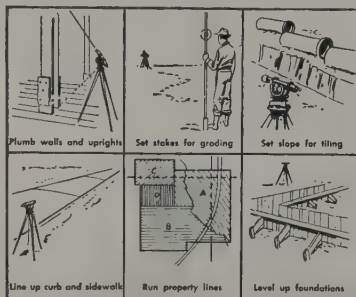
White Universal Level-Transit...



the most versatile instrument you can own!

YES, the White "Universal" Level-Transit is the most practical, complete instrument on the market. Now available in a new improved model — the No. 3000 — with internal focusing, coated optics, guarded vertical arc. In fact, every feature to assure you lifetime durability and accuracy. And the price is *only* \$185*, complete with tripod. See your dealer, or write DAVID WHITE COMPANY, 397 W. Court Street, Milwaukee 12, Wisconsin.

Indispensable for all these jobs and many more

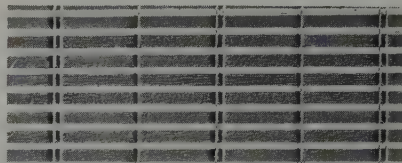


We offer the most expert REPAIR SERVICE on all makes, all types of instruments.

*Price subject to change without notice.

7195

PRODUCT NEWS



WINDOW SHADES woven of wood strips and clear plastic rods

Made of 1/4" basswood staves woven alternately with transparent 1/16" rods, *Plastic Lattishades* admit more diffused light than the usual wood blind, without sacrificing privacy. These unique decorative shades are made in two styles. Type A *Lattishades* are mounted on 1/4" spring rollers like ordinary window shades, and are made in sizes up to 36 sq. ft. For larger areas (up to 12' wide and 10' long) the cord-drawn Type B is suitable. Both types are available at 90¢ per sq. ft. (retail) in natural, off-white, gray, light green, citron yellow and walnut. Vertical warp threads spaced 1 1/2" apart create a visual counterbalance to the widthwise wood strips so that a *Lattishade* looks well on a long narrow window as well as over a large horizontal glass expanse.

Manufacturer: The Columbia Mills, Inc., 101 Park Ave., New York, N. Y.



Inexpensive and good looking, the new Scots-Wai rugs are woven of coated paper fiber. They are washable and reversible, and are made in six different color combinations.

A small amount of curly synthetic fiber added to the wool in Nye-Wait's new carpeting gives it a springy resilience. Bright pastel lines are woven into the natural cream chenille.



The narrow plastic rods which run between the 1/4" wide basswood staves break up the image behind the blind as well as the light coming in, thus providing privacy for those in the room.



Lattishades are made like regular window shades in sizes up to 36 sq. ft. In larger units, they roll up from the bottom; no side track is needed.

FIBER RUGS: tweedy weaves, modest prices

Among the Waite floor coverings tapped for this year's *Good Design* exhibit are two styles of treated paper fiber rugs. One, *Rush-Wai*, is a muted plaid made up of 1' squares in four beige tones. It is manufactured in all standard sizes, and the 9' x 12' retails at \$27.95. The other, *Scots-Wai*, is a tweedlike weave which is available in six color combinations: a black and white (pictured left), shades of green, rose, gray, red brown, and *Oatmeal* — a tan and gray mixture. The *Scots-Wai* 9' x 12' rugs sell for \$24.95 and like *Rush-Wai* are reversible and long wearing, and easy to clean. They may be mopped or vacuumed.

A woof of multicolored rayon twist through a warp of paper fiber, *Waitrend* carpetings sell for about \$3.74 per sq. yd. It is styled with either a brown or gray ground.

Manufacturer: Waite Carpet Co., Oshkosh, Wis.

LUXURY CARPETING: subtle pattern, contemporary texture

This high-style chenille sports the shagginess of a well groomed Airedale. Pencilled with striations of yellow ochre, chartreuse or aquamarine against a cream background in its new *Strata* pattern, the thick looped *Shagstone* weave retails for about \$27 per yd. A small proportion of crimped long staple acetate is blended with the wool for added buoyancy. The synthetic yarn is also reported to take color very well. The floor covering will be

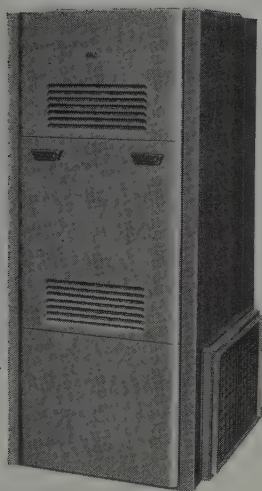
(Continued on page 162)

WIDER HEAT RANGE

in **5** New Furnaces

added to **COLEMAN**

Blend-Air®
HEATING AND VENTILATING SYSTEM



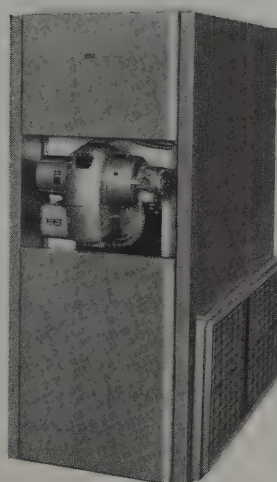
GAS

3 NEW MODELS

(Natural, Mfd., Mixed, LP-Gas)

75,000, 100,000 and 125,000 BTU input

Factory-assembled complete with rugged combustion chamber, burner, blower-motor unit, inner casing—all enclosed in beautifully styled cabinet. Internal wiring ready to connect to thermostat and house service. Controls factory-installed, conveniently located in vestibule compartment. Unusually compact for models of this capacity, assuring outstanding performance to suit every home. Approved by American Gas Association.



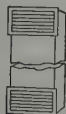
OIL

2 NEW MODELS

80,000 and 97,000 BTU output

They take unusually small floor space to give dependable heating performance at low operating cost. Equipped with Coleman gun-type burner. Smartly designed with neutral tan baked enamel finish. Filter frame removable to either side for flexibility in installation. *Other Coleman features:* Even-Flo Blower Unit, Exclusive Coleman Draft Meter and Chimney Crown, completely automatic Control System for trouble-free operation. Listed under label service of Underwriters' Laboratories.

The
1-2-3
of
Coleman
Blend-Air



1. MAGIC BLENDER

in each room blends room air with freshly heated furnace air right in the wall, then RE-circulates for even warmth.



2. 3½-INCH HEAT TUBES

carry freshly heated air to Blenders. Small enough to fit any construction, old or new.



3. BLEND-AIR FURNACE

with fresh air intake uses up as little as 6 sq. ft. of floor space anywhere—basement, closet, utility room.

These 5 new Coleman Forced Air Furnaces

now make it possible to equip more homes with the revolutionary, low-cost Blend-Air Heating and Ventilating System. Users everywhere praise its low-cost performance and evenly distributed automatic comfort—it's the kind of heating performance customers are willing to buy—makes homes easier to sell. Send coupon for complete information. The Coleman Company, Inc., Wichita 1, Kansas.

Comfort costs so little with a Coleman
America's leader in home heating



THE COLEMAN COMPANY, INC.
Dept. MB-752, Wichita 1, Kansas

Please send complete information on Coleman Blend-Air.

Name

Street

City State

If you design, build
or finance houses...
you'll want this unique
guide to More Sales
through Comfort
from Moving Air!



THANKS to modern air-moving equipment, architects and builders have gained a new freedom in design... and found an important new avenue to client satisfaction. "Open kitchens" that don't spread greasy smoke and kitchen smells... odor-free "inside" bathrooms... are only two of the advances made possible by modern air-moving units. 120 leading American manufacturers of air-moving products have cooperated in publishing this unique guide to better houses and more sales through *Comfort from Moving Air*. A valuable data book, it gives you an accurate and illustrated description on everything from Air Circulators to Central Heating Systems. Send for your free copy today!

BOX 808-X, TORRINGTON, CONN.
Please send my FREE copy of the '52 GOLD BOOK
"How to have Comfort from Moving Air"

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____



America's Leading Suppliers of Fan Blades and
Blower Wheels for the Air Moving Industry

THE TORRINGTON MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT

PRODUCT NEWS

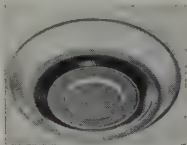
dyed any solid hue specified at no extra cost. Architects and designers may purchase the carpeting at discount.

Manufacturer: Nye-Wait Co., Inc., Auburn, N. Y.

CEILING DIFFUSER distributes warm air evenly throughout room area

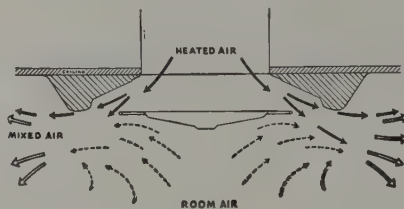
Modifying its commercial air diffuser for domestic forced warm air systems, W. B. Connor has come up with a compact ceiling outlet. The unit is a small shallow dome of spun metal and is about as conspicuous as a striped chandelier base. Its main parts are a collar and two deflector rings.

The inner deflector is positioned to send the heated air coming into the diffuser out and down into the room. The outer deflector, a rounded shoulder, directs the flow away from the ceiling. As the warm air leaves the diffuser the impact of its current causes it to mix with room air in a ratio of about 4½-to-1. This entrainment takes place inches away from the diffuser, well over the heads of room occupants.



Thus warm air is constantly introduced in an umbrella pattern at a rate that replaces all the air in the space every 12 mins. The cooled air at floor level is drawn back to the furnace through grilles below the windows.

Experimental installations made last year in Connecticut houses showed that overhead diffusion of warm air provides housewide com-



fort, and clean and economical operation, the manufacturer reports. Quick, draftless and sustained heat distribution and temperature differentials of no more than 1½° F. throughout the house are among the advantages claimed for the ceiling outlets. For the distribution system, ducts of prefabricated round pipe and elbows are laid across waste space in the attic floor. The residential diffusers are made in five sizes with neck diameters from 4" to 8" and are priced from \$7 to \$11. Over-all diameters measure 11¾" to 20 7/16" high and from 2½" to 4" deep. The units have air delivery capacities ranging from 50-300 CFM. Originally engineered for cooling systems, the ceiling outlets are suitable for year-round air conditioning.

Manufacturer: W. B. Connor Engineering Corp., Shelter Rock Lane, Danbury, Conn.

(Continued on page 166)

philippine mahogany



BETTER LOOKING LONGER LASTING INTERIORS

Today, the building profession is fortunate in having Philippine Mahogany available for paneling, fixtures and trim, in both solid lumber and plywood. Even your most discriminating clients will like the interesting grain and beautiful natural color of this tropical hardwood, and its long life and easy maintenance will be appreciated long after the original cost is forgotten. Incidentally, it's competitively priced with other woods and building materials.

PHILIPPINE MAHOGANY IS IDEAL FOR HOME IMPROVEMENT

Investigate the advantages of using Philippine Mahogany for paneling a single room, or remodeling an entire home.



Write for literature.

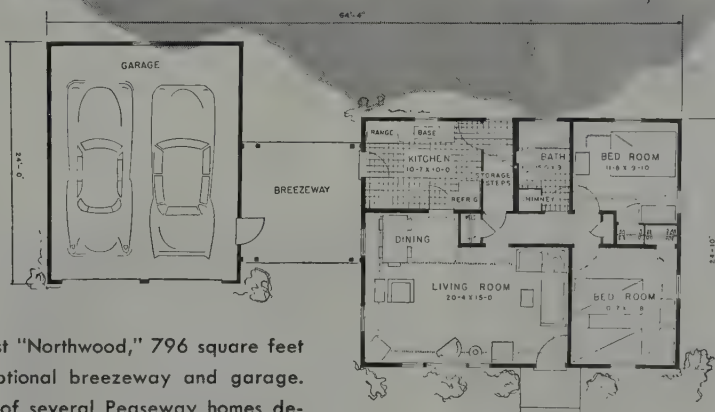
PHILIPPINE MAHOGANY ASSOCIATION, INC.
Dept. B-1, 111 West 7th St., Los Angeles 14, Calif.
PHILIPPINE LUMBER PRODUCERS' ASSOC., INC.
MANILA

*the All-Market
Builder
builds Peaseway*



The Northwood

A Peaseway franchise assures the builder a profitable building program . . . because with Peaseway homes, he builds for any and all markets. There are 8 basic Peaseway designs, with variations practically unlimited.



Shown here is the low-cost "Northwood," 796 square feet with 2 bedrooms and optional breezeway and garage. "The Northwood" is one of several Peaseway homes designed for the budget-wise buyer, and for the large building projects in critical areas.

Other Peaseway designs range up to the contemporary design "Archwood" containing 1410 square feet, 4 bedrooms and 2 baths . . . a history making luxury home, but at a price within the reach of many.

Capitalize on the flexibility of the Peaseway line of homes. Be a Peaseway franchise builder. Write today for complete information.

Prices range from \$7000—FHA accepted.

WRITE TO:
PEASE WOODWORK COMPANY
ROOM 433
CINCINNATI 23, OHIO
"In business in Cincinnati since 1893"

PRECISION

the only attic stairway
equipped with
ROLLER BEARINGS



Life time,
factory packed
ROLLER BEARINGS
make raising and
lowering stairway
practically effortless.

Precision Parts Corporation,
not content with the smoothest
and easiest operating stairway
on the market, equipped their Precision
Folding Stairway with roller bearings for
still smoother and easier operation.
Actuated by counterweights which op-
erate on these bearings the stairway is
practically 100% free of friction and all
but raises and lowers itself.

OTHER OUTSTANDING FEATURES

Constructed of No. 1 kiln dried poplar.
Heavy cast aluminum alloy brackets,
rocker arms and hinges. Composition
safety treads on steps. Door panel
insulated with Cellufoam. Requires no
attic space. Approved by F.H.A. every-
where.

For complete information write or
wire us today.

Manufactured by

PRECISION PARTS CORPORATION
402 NORTH FIRST STREET
NASHVILLE 7, TENNESSEE

PRODUCT NEWS

DOOR AND FRAME IN CARTON, ready to hang

Machine cut, assembled and packaged at the factory, the *Hasko Ready Hung* door and frame promises to cut installation time in half. In about 20 mins. a semiskilled carpenter can uncrate the unit, slip the frame in place, nail it to the wall, set the door knobs (the only hardware not attached at the plant) and check

The workman just uncrates the door and frame and nails the unit in place.



the door's closure. The frame is made in two telescoping sections so that it may be adjusted to various wall thicknesses from $4\frac{1}{4}$ " up to $5\frac{1}{2}$ ". The unit is made with a flush door and sells for about \$35 in the 2'-6" x 6'-8" size.

The *Ready-Hung's* manufacturer is also marketing a sliding door packaged with hardware already installed. Called the *Nova Roller Door*, this unit has two guides in a head track and its weight is supported by recessed rubber rollers which extend $\frac{1}{4}$ " below the door and run on the finished floor; no floor track is re-

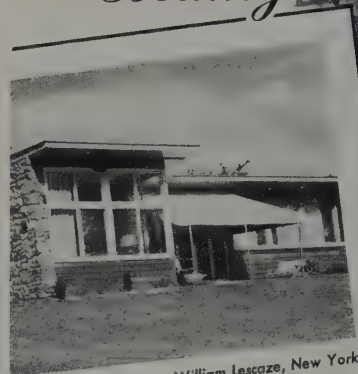


quired. The doors are warp resistant, hollow core, flush models and come in a variety of wood finishes. Storage closet and passageway models (the latter is a single door with a wall pocket) are available for all standard size openings. A 4' x 6'-8" unit costs about \$37.

Manufacturer: Haskelite Mfg. Corp., Grand Rapids, Mich.

(Continued on page 172)

ADD
*Lasting
Beauty*



Architect: William Lescaze, New York

with

CABOT'S *Redwood Stains*

Cabot's California Redwood Stain actually dyes new exterior redwood its own natural color — keeps it looking fresh and bright — prevents dullness and darkening! High content of creosote oil assures years of protection and undimmed beauty.

CABOT'S 325 CALIFORNIA REDWOOD STAIN

specially blended pigments compounded in creosote oil capture and preserve the natural color of new Redwood.

CABOT'S 3625 SEQUOIA RED STAIN

same color as Cabot's California Redwood Stain but with heavier pigmentation and greater hiding power.

CABOT'S 351

EUCALYPTUS GRAY CREOSOTE STAIN

imparts a delicate greenish gray color to the wood.

CABOT'S 241 CREOSOTE BLEACHING OIL

turns wood to weatherbeaten driftwood gray, which develops gradually over 6 months' exposure.

CABOT'S 800 CLEAR GLOSS FINISH

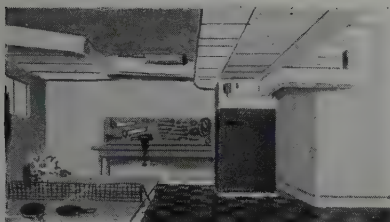
a transparent waterproof finish producing a lustrous gloss . . . particularly designed for Redwood.

write today for folder
"Redwood Staining," and color card
showing Cabot's Creosote Stains.

SAMUEL CABOT, INC.
430 Oliver Bldg., Boston 9, Mass.

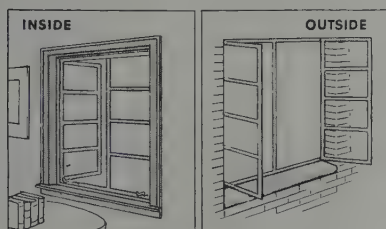
Architectural Service

Better Ductwork



A fast-moving trend to aluminum for heating, ventilating, and air conditioning ducts will soon make it the accepted material standard. Aluminum makes neater installations—an important factor in such places as game rooms. Rust problems are eliminated in laundry areas or wherever moisture is a consideration. Finished costs for aluminum ductwork are comparable to those with less permanent materials because lightweight aluminum is easier to handle, fabricate and install. For completely satisfied clients specify aluminum ductwork.

Window Sills and Stools



Durable aluminum alloy extrusions are the modern answer to the home-builders demand for the finest in window trim. Designed to take hard wear and still keep a storm-proof fit, even to moving parts, these fittings eliminate maintenance, rust and rotting hazards. Easy to install, window fittings of Reynolds Aluminum stay bright and new looking after years of service... and best of all, they fit right in with modern aluminum windows, so popular in present day homes.

Storm-Screen Doors



Combination storm-and-screen doors of naturally attractive aluminum are approved by FHA for private dwellings. There are many good brands made of Reynolds Aluminum on the market today. Remember, in new buildings, or in remodeling, specify *aluminum*. The slight extra cost pays for itself in longer life and reduced maintenance expense. (Advertisement)

Measure
ALUMINUM
by these yardsticks

✓ **UTILITY**
✓ **APPEARANCE**
✓ **INVESTMENT VALUE**

You can get these advantages *plus* specialized help from the Reynolds Architectural Service

Memo to Contractors and their Architects: When planning your next job, regardless of type or style, stop and ask yourself this question—what other building material offers the complete list of advantages that you find in aluminum?

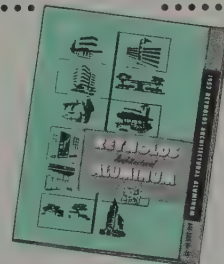
Check these advantages of this light, modern metal. Unlimited design flexibility... light weight with great strength (more metal per pound with comparable strength factors)... natural attractiveness... rust and corrosion resistance... wide range of finishes. All these points mean aluminum is the ideal material for your specifications.

Even though the supply of aluminum for building purposes is limited at the present time, enlarging production facilities assure an increased supply in the future. Also, remember that the valuable assistance of the Reynolds Architectural Service is available to all recognized contractors and their architects for the asking.

This service is always ready to help provide an efficient and economical solution to your design problems. For complete information, call the Reynolds office listed under "Aluminum" in your classified telephone directory.

NEW FREE CATALOG!

Send for your free copy of the new 1952 catalog on Reynolds Architectural Aluminum—AIA File No. 15. Handsome, 3-color presentation of the materials Reynolds offers in the architectural aluminum field. Tells the complete story of Reynolds Aluminum and the advantages for any architectural purpose. Covers design and fabrication, lists various types of finishes, shows applications and installation details with drawings. Illustrated examples of decorative sheet—embossed and perforated. Gives sample short form specification, alloys most commonly used, etc., plus a complete list of helpful technical literature. Send your request on business letterhead to Reynolds Metals Co., 2528 S. Third St., Louisville 1, Ky.



REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND



Builder Beckenstein, left, examines Electronic Weathercaster with Honeywell salesman Bob DeWitt

"I tried Electronic Moduflow in 24 homes— and had to put it in 75 more!"

says Louis Beckenstein, Builder, Hartford, Connecticut

"In line with the policy we adopted for Green Acres, Inc.—the finest kind of ranch home at a reasonable price—we naturally wanted to use the very best heating control on the market, Honeywell's Electronic Moduflow.

"But we'd planned the cost of the homes so carefully we weren't sure our prospective owners would go for even the small additional expense involved.

"So, in our first group of 24 houses, we decided to make Honeywell Electronic Moduflow optional—along with several other 'extras.'

"As it turned out, some buyers wanted some

extras, others different ones. But after we'd explained how they'd enjoy truly superior comfort, *all 24 ordered Electronic Moduflow.*

"This sure taught me that people really do care about comfort, that they're more eager to buy when you can promise them the finest. You can bet I took my cue from that.

"I guess it's not hard to see why I *had* to put Honeywell Electronic Moduflow in the 75 additional houses I had under way, and why I've ordered Electronic Moduflow for the next 50 on my building schedule."



Another Plus-Profit
Idea from Honeywell!

"Why Electronic Moduflow can make your homes easier to sell"

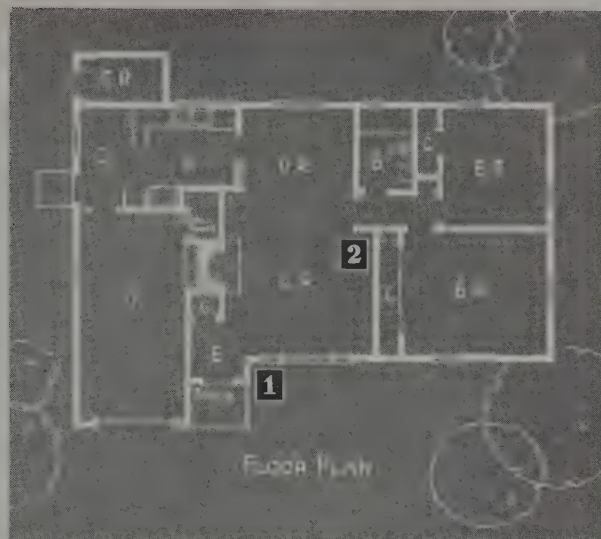
"As I learned at Green Acres, every prospect is comfort conscious—whether he knows it or not. And you can make this fact work to your advantage if you'll only give it half a chance.

"I've noticed a buyer becomes a whole lot more interested when you explain that in *this* house he'll be more comfortable—even in the worst winter weather—than he's ever been before.

"And when you show a house that's equipped with Honeywell electronic temperature controls, if your prospect is interested in buying at all, you're a lot further along with your sale.

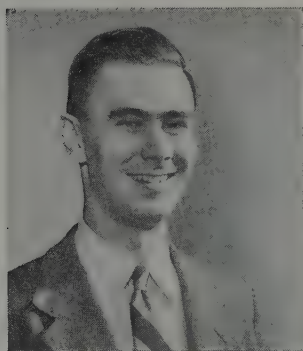
"It doesn't hurt to tell him *why* Electronic Moduflow is better, either. That simply because the controls *are* electronic, they're 28 times more sensitive. That in the new Honeywell Moduflow system, outdoor and indoor thermostats work together to give comfort that's close to ideal.

"In my opinion, the plus value offered by Honeywell Electronic Moduflow can definitely make your houses easier to sell."



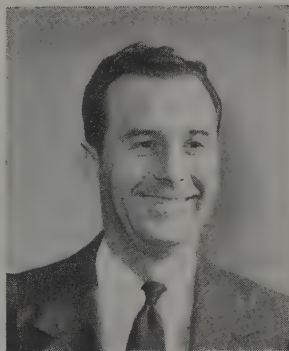
Shown above is the floor plan of one of Green Acres' radiant floor panel Electronic Moduflow homes. Sensing elements of the particular system builder Beckenstein used, as numbered on the floor plan, are: 1) the *Electronic Weathercaster*, which detects shifts in the outside temperature and resets the indoor thermostat to provide for weather changes; 2) the *Indoor Thermostat*, which the home owner sets at the comfort level that suits him best. A third important element, the *Electronic Relay Amplifier*, is generally located in the utility room.

What owners say:



Harry A. Cross, Jr., 51 Mapleside Drive, Wethersfield, Connecticut.

"If you'd ask me why I think Electronic Moduflow is the best comfort control on the market, I'd point to the Weathercaster mounted outside our front door. It's the best idea for beating the weather I've ever heard of."



Joseph R. Clancy, 77 Mapleside Drive, Wethersfield, Connecticut.

"Until we'd spent a winter in our 'Moduflow' home, I had no idea temperature controls could make such a difference in our comfort. Mark me down as a man who's convinced that Honeywell's Electronic Moduflow is the finest system going."



To date Green Acres, Inc., has built 99 Electronic Moduflow homes similar to this. And business is so good they're going ahead with 50 more. The 5-room ranch style house was developed after builder Beckenstein made a country-wide survey to find out what people really wanted in the way of a home. The house was designed by Hartford architect Irving W. Rutherford.

See your local Honeywell office—or send for more information

MINNEAPOLIS
Honeywell

First in Controls



MINNEAPOLIS-HONEYWELL REGULATOR CO.

Dept. HH-4-77, Fourth Avenue South
Minneapolis 8, Minnesota

Gentlemen: Please send me more facts on your new Electronic Moduflow system for homes.

Name _____

Firm Name _____

Address _____

City _____ Zone _____ State _____

IN-SINK-ERATOR

ELECTRIC FOOD WASTE DISPOSER



MODEL
900



MODEL
900-A

TWO MODELS FIT *Every Installation Need!*

▶ **LOOK AT IN-SINK-ERATOR** feature by feature and you'll find the disposer value the Builder wants—the disposer design the Architect prefers.

- ☒ **Choice of Two Models**—one for every installation need. Off-set body can be rotated to adapt IN-SINK-ERATOR to unusual cabinet designs, off-center drains and shelf requirements.
- ☒ **Automatic Reversing Action** for longer life and greater efficiency.
- ☒ **Continuous Feed** for greater operating convenience.
- ☒ **Two-Way Cleansing** assures complete sanitation.
- ☒ **Proven Dependability**—task-tested in home use since 1938.

EASY TO INSTALL—simplicity of design permits easy, economical installation. No special tools or training required.

EASY TO SERVICE—built-in features overcome minor operational difficulties and minimize need for outside service.

SEE SWEET'S $\frac{7a}{in}$ BUILDERS, $\frac{24a}{in}$ ARCHITECTURAL FILE—or write for data and prices

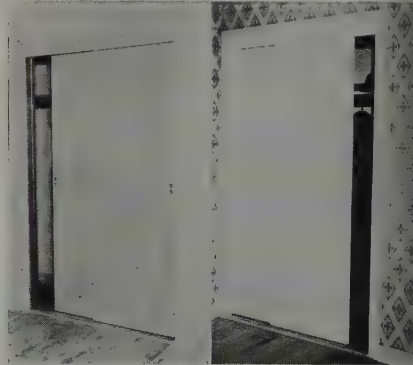
IN-SINK-ERATOR MANUFACTURING COMPANY
1213 Fourteenth Street • Racine, Wisconsin

World's Oldest and Largest Exclusive Manufacturer of Food Waste Disposers

PRODUCT NEWS

WARP RESISTANT SLIDING DOORS made with new wood laminate

One of the first fabricators to utilize U. S. Plywood's *Novoply* (Dec. issue, '51) in a building product, National Door Co. is making low priced sliding doors with the wood-waste wonder material. Two- and three-panel *Slidoor*

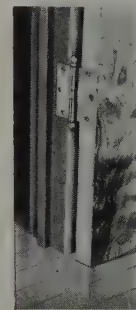


units are available 6'-9½" and 8' high for openings from 2' to 12' wide. The doors glide noiselessly on ball-bearing rollers, and adjustable rear slide guides compensate for any inaccuracy in header height. The unit's construction, combining hardwood frame with the lightweight laminate board doors, is said to assure exceptional dimensional stability. A 4' x 6'-9½" two-panel model sells for about \$25.

Manufacturer: National Door Co., Kenilworth, N. J.

KNOCK-DOWN STEEL DOOR FRAME is slim counterpart to flush door

Kewanee's prefab steel door frame, designed for all 1⅝" and 1¾" interior doors, is priced for the low cost home market. Selling for about \$6.50 to \$8 (depending on quantity purchased), this slim trim affords the builder savings in labor as well as initial cost. The



frame is primed at the plant with a corrosion resistant aluminum coating and shipped in three parts—the top and two sides. Nail holes are prepunched every 7" along the frame flange for attachment to the subframe—a rigid fastening method said to prevent vibration. A small space is allowed for laying the finished floor under the frame; thus the time spent cutting the floor

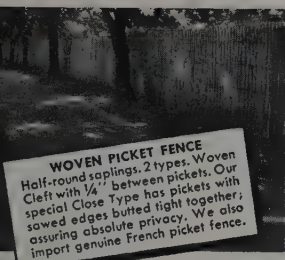
around the jamb contour is eliminated.

Another of the frame's features is its recessed edge (designed for both plaster and wallboard construction) which acts as a plaster ground so that no temporary stops are needed. Recesses also are provided in the jamb for standard 3½" x 3½" butt hinges.

Manufacturer: Kewanee Mfg. Co., Kewanee, Ill.

(Technical Publications on page 178)

WOODEN FENCES



WOVEN PICKET FENCE
Half-round saplings. 2 types. Woven Cleft with 1/4" between pickets. Our special Close Type has pickets with sawed edges butted tight together; assuring absolute privacy. We also import genuine French picket fence.



POST AND RAIL FENCE
A strong, beautiful, long-lasting all-purpose fence. Made of finest selected, hand-split chestnut-timber. Available in the 2, 3 or 4 rail types. As with all Rusticraft Fences, matching gates of many widths available.



ENGLISH HURDLE FENCE
Ideal for property lines. Gives protection from trespassing. Two heights 3 ft. and 3 ft. 8 in. Closely spaced lower rails protect shrubs, keep dogs off or within property. Shipped in 8 foot sections, ready to erect.

We make many types of wooden fences which are illustrated and shown in our booklet. Many architects specify Rusticraft wooden fences. We ship to all parts of the United States.

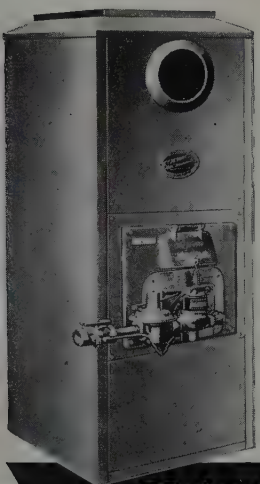
WRITE FOR BOOKLET

Manufacturers of.
IMPORTED FRENCH PICKET FENCES — WOVEN CEDAR PICKET FENCES — ENGLISH HURDLE FENCES — POST AND RAIL FENCES — "Won't-Sag" FARM GATES — SELF-LOCKING FIELD GATES — CHILDREN'S (OUTDOOR) PLAY-YARDS.

Rusticraft FENCE CO.

DAVID TENDLER • EST. 1918 • 7 KING RD. • MALVERN, PA.

New famous-make heating unit even smallest, low-cost homes can afford!



Majestic
automatic
forced-air
UTILITY FURNACE
for
OIL or GAS
only **22"** square

- UP TO 80,000 BTU OUTPUT
- DRAWER-TYPE BURNERS
- UP-FLOW or DOWN-FLOW

Model UF-22 Model DF-22

Ideally suited for public housing projects

Write today for details

The **Majestic Company, Inc.**

416 ERIE STREET, HUNTINGTON, INDIANA

"HEATING SPECIALISTS SINCE 1907"

When you start with natural wood...



The beautifying, satin-smooth finish for

FLOORS
PANELING
ALL WOODWORK

Won't Scratch or Mar

Will Not Darken with Age

Outwears Other Finishes

shellac

Easy to Apply—
Easy to Maintain

dries fast, simple to re-touch and keep beautiful

More and more architects and builders are starting with natural wood effects — in living rooms, rumpus rooms, dens and kitchens — and specifying shellac to bring out all the beauty of the wood grain.

You know the reasons why. Shellac is today's time-tested finish—a natural for natural wood. So always specify the finest of all modern finishes — shellac.

Nationally
Advertised

shellac INFORMATION BUREAU

of the American Bleached Shellac Manufacturers Assn., Inc.
65 PINE STREET, NEW YORK 5, N. Y.

Dept. B-4

Please send me, without obligation, "Standard Specifications on the Use and Application of Shellac."

FIRM NAME _____

ADDRESS _____

CITY _____

ZONE _____

STATE _____

SIGNED _____

MAIL TODAY

The "little extra" that
clinched a sale . .



HASN'T IT HAPPENED TO YOU?

You sensed that your prospects *liked* your house, but apparently had seen several they liked equally well.

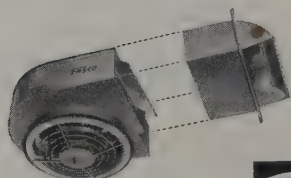
So you turned on the "And look at this special feature" sales talk. Colored bathroom fixtures, maybe—or easy-open windows—or tricky hardware—or perhaps a *built-in kitchen ventilator*. And the lady succumbed—didn't she?

FASCO ventilators are this kind of "little extra" that clinches sales. And the wonderful thing is not only that they help close deals and pay you extra profit—but you can point to the brand name with special pride—because no ventilators in America are better made or better values.

Write for illustrated literature.



FASCO Wall Ventilators—
for outside walls



FASCO "Ceil-N-Wall"—
for ceilings or inside walls



FASCO
Industries, Inc.
211 AUGUSTA ST., ROCHESTER 2, N. Y.

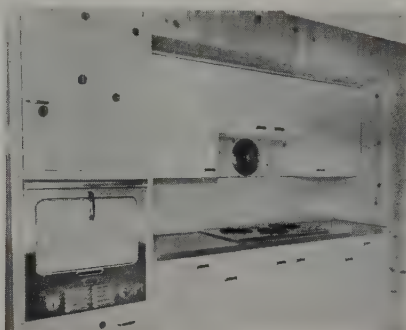
PRODUCT NEWS

BUILT-IN COOKING APPLIANCES get nod from FHA in budget house

Last fall Dallas builder Rodney Hughes put Chambers' *In-a-Wall* oven and *In-a-Top* burners in his \$9,999 house and received the first FHA mortgage to cover this convenient cooking equipment. The loan takes the luxury stamp off built-in appliances.

The homeowner will pay \$2.05 a month for the installed units—a total of \$409 over the 20 year period. The cost breakdown is \$259.50 for the oven, \$129.50 for the surface unit and \$20 interest.

Supplying the Chambers' units at their retail price set in pine cabinets, Hughes provides a pleasant practical kitchen for the homemaker. Said he, "I put the gas range in the kitchen cabinets because that's the

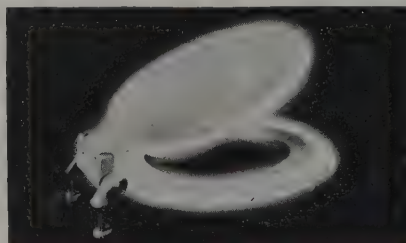


way the women like 'em." It may have been Chambers' 25 year guarantee that convinced the government bureau to write the equipment into the mortgage, but in Texas, at least, FHA chivalry is not dead.

Manufacturer: Chambers Corp., Shelbyville, Ind.

TOILET SEAT: it glows in the dark

Here is an item which may interest the client who longs for Dick Tracy wrist radios, 27-color automatic pencils, and sundry pies-in-the-sky. Swedish Crucible's closet seat has a luminous finish that glows in a darkened



room. Designated the No. 50-L, the new seat is of solid construction and sells to builders for the same price as other "pearlescent" fixtures in the *Olsonite* residential line—about \$12. It is available in an off-white pattern.
Manufacturer: Swedish Crucible Steel Co., 8561 Butler, Detroit 11, Mich.

Technical Publications, page 180

To Subscribers

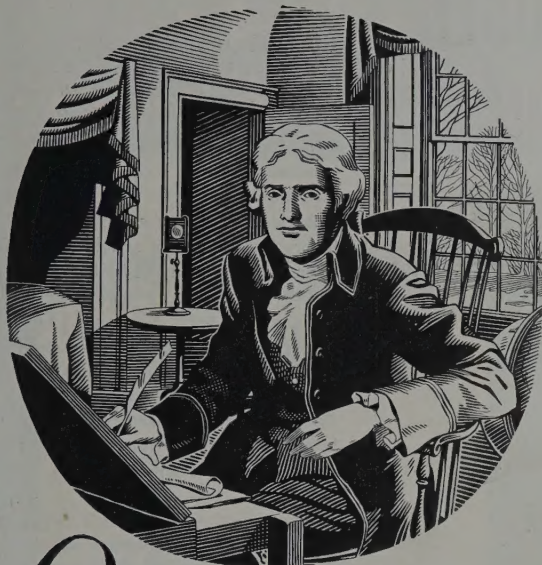
When you move, please tell us at the earliest possible moment so that you may continue to receive copies of **HOUSE & HOME** without delay.

To expedite the change of address, send the old address as well as the new.

HOUSE & HOME

540 N. Michigan Avenue

Chicago 11, Illinois



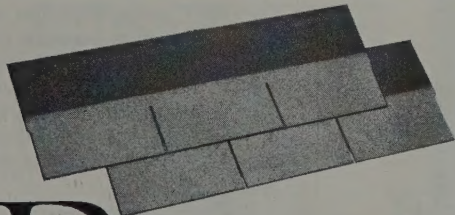
Quality products since 1795

Bird has been making quality products for America and its people ever since Thomas Jefferson contributed his ideas and ideals to our early growth.

Today Bird offers you the greatest achievement in a variety of asphalt shingle values.

- ★ Thick butt construction, with *extra* layers of asphalt and firmly embedded mineral granules give added years of wear where it counts . . . on exposed tabs.
- ★ New pastel colors!
- ★ Fire-resistant, of course—certified by Underwriters' Laboratories.
- ★ 215 lbs. of working weight protect every 100 square feet of roof.

For more information write Bird & Son, inc., Dept. MB-4, East Walpole, Mass.



BIRD



Roofings & Sidings

ASPHALT SHINGLES & INSULATING SIDINGS
WATERPROOF PAPERS • ROLL ROOFINGS

East Walpole, Mass. • New York, N. Y. • Chicago, Ill. • Shreveport, La.



KENNATRACK

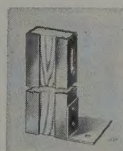
leads again!

Amazing new Series 800
metal sliding
passage door frame gives
you advantages
never before available!

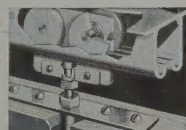


saves time
saves labor
eliminates warp

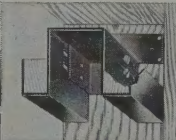
Builders, architects and owners from coast to coast are demanding the Kennatrack Series 800 Metal Frame for sliding passage doors. This frame saves time . . . saves labor . . . eliminates warp, and can easily be installed by anyone. Treated for rust resistance. Multiple adjustment features make fit and plumb child's play. Designed for all standard 2 x 4 walls. Frames come in standard door widths. Secure complete facts . . . then you can see more clearly just what these advantages mean.



Prefabricated and complete in one package. Includes famous Kennatrack Series 400 heavy duty track assembled to header at factory, with hangers in place. Can be installed on the job in 25 minutes.



Above: Wood filler strips in metal frame allow plaster base, stops and trim to be nailed or screwed in usual manner.



Door rolls smoothly, quietly on not two . . . not four . . . but on EIGHT Nylon wheels. Ball bearing axles.

Left: Header adjustable two ways: (1) Pocket end allows $\frac{3}{4}$ " horizontal adjustment to fit rough opening; (2) Jamb end permits $\frac{3}{4}$ " vertical adjustment.



Left: Split jambs and supports also provide 1" adjustment for height.

Address Dept. B-4

JAY G. McKENNA, INC.

ELKHART, INDIANA
Jay G. McKenna (Canada) Ltd., 104 Jarvis St., Toronto
SPECIALIZING EXCLUSIVELY IN THE MANUFACTURE OF SLIDING DOOR HARDWARE

A report
to the
Building
Industry

BUILDERS HAVE USED OVER ONE MILLION GARBAGE DISPOSERS SINCE 1947

Now, more than ever before, garbage disposers have proved to be the one outstanding value-feature that customers want and look for — when they buy or rent.

Modern builders recognize the *mass appeal* that garbage disposers offer for "Garbage-free Living" — and consider them as *necessary* as the kitchen sink.

MORE BUILDERS USE



THAN ANY OTHER BRAND

Waste King Pulverator has been established, *over 300,000 Waste Kings ago*, as the most advanced, efficient and service-free garbage disposer on the market.

Whenever comparison is made — only Waste King Pulverator offers these superior design features:

3 NEW MODELS—there's a proper size to fit any sink easier, faster. Models: #550, #700 and #1000.

EASIEST TO INSTALL—3 sturdy mounting clips secure the Waste King in place. Reduces installation time in half.

RECORD OF PERFORMANCE—less than 1% service callbacks. The builder is relieved of responsibility. Customer satisfaction is assured!

A Product by
GIVEN
MANUFACTURING COMPANY
LOS ANGELES 54, CALIF.

© Given Mfg. Co., 1952



"HUSH-CUSHIONS"—hold the Waste King in *full-floating suspension*. 50% quieter, smoother operation. Eliminate vibration and noise from penetrating sink, walls and plumbing.

CONTINUOUS-FEED OPERATION—no stop-and-start feeding. All food wastes are fed into the Waste King while it is operating. Saves time, more convenient.

LIFETIME GRIND CONTROL—controls the size of all food waste particles and fibrous material. Assures years of clog-proof, dependable operation.

Given Manufacturing Co., Dept. MB4,
1250 Wilshire Blvd., Los Angeles 17, Calif.

Please send free garbage disposer AIA file folder set.
I contemplate using.....garbage disposers within the next six months.
Firm Name.....
Address.....
City.....State.....
Your Name.....

TECHNICAL PUBLICATIONS

HOUSING. Housing Research, No. 2. Housing and Home Finance Agency. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 8 x 11", 30¢.

The excellence of *Housing Research, No. 1* is maintained in this second issue of the government quarterly. Treating several vital sociological and construction aspects of housing in brief authoritative articles, the publication is must reading for the building industry.

The first paper, prepared by HHFA mechanical engineer Robert K. Thulman (designer of the Thulman prefab chimney (Feb. issue '51, p. 198), deals with metals saving in domestic heating. It compares 1950 and 1951 trends in fuel use and construction which influence heating system needs, and has direct bearing on current materials conservation measures.

The second article, which examines the income and housing situation of old people in the U. S., is a ground study for planners concerned with programs for housing the aged. Economist George R. Kinzie's paper, "Regional Patterns of Materials Used in New Houses," will interest manufacturers and dealers as well as contractors since it surveys national variations in materials utilized for water systems, roof gutters, screening, interior finish, wiring, and insulation. Some practical building suggestions are contained in "Prevention of Cold Weather Roof Leaks," and another paper analyzes the lag in the use of residential building permits. Several bulletins being prepared by the HHFA to help builders save materials are previewed. It's a lot of book for 30¢.

CONSTRUCTION FINANCE. Financing House Construction in the Northwest. By Bayard O. Wheeler. Housing and Home Finance Agency. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 8 x 11", 56 pp. 30

Costs and recommendations for improving home construction financing are reported in this housing research paper. Prepared by the University of Washington's College of Business Administration, the study is another facet of the HHFA's research program to cut home-building costs and facilitate defense housing production.

This first detailed analysis of construction financing in Seattle and Spokane, Wash.; Portland, Ore.; and Boise, Idaho was conducted in the summer of 1950. It therefore reports on loan procedures current before the Korean outbreak. (Similar studies are now being conducted in the Midwest.)

The report discloses that, exclusive of land cost and builder's profit, loans averaged 77% of construction cost. Established lending institutions supplied most of the money, and the general practice was to require a permanent mortgage on the property before construction equal to the amount of the loan.

(Continued on page 184)

Set tile cheaper and faster

with 3M CERAMIC TILE ADHESIVE #10

Lower bids and more jobs . . . that's what using 3M Ceramic Tile Adhesive means to architects, builders and contractors! Tile goes on so much easier and faster that you can save up to 20% on a tile job . . . and pass the savings on to your customers.

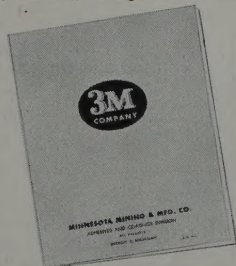
The light weight of 3M Tile Adhesive makes it ideal for dry-built walls as well as conventional mortar-plaster walls. In remodeling jobs, existing walls easily support the weight of adhesive-set tile. And the quick curing time of 3M Tile Adhesive allows newly tiled rooms to be used the next day.

Working with adhesives is much easier than with mortar. Clean-up is kept to an absolute minimum because there is no mixing and carrying of heavy materials from room to room. Cold weather will not stop tile construction . . . low temperatures have no effect on it.

Make your tile jobs durable as well as economical. Be sure to specify and use 3M Ceramic Tile Adhesive No. 10!

Write for sample and information!

Send today for a sample of 3M Ceramic Tile Adhesive #10, and also for specification and data sheets covering the description and use of CTA #10. Write 3M, Dept. 154, 411 Piquette Avenue, Detroit 2, Michigan.



ADHESIVES AND COATINGS DIVISION
411 PIQUETTE AVE., DETROIT 2, MICH.



MINNESOTA MINING AND MANUFACTURING COMPANY
GENERAL SALES OFFICE: ST. PAUL 6, MINN.
EXPORT OFFICE: 270 PARK AVE., NEW YORK 17, N. Y. • IN CANADA: LONDON, CANADA

Nervastral SEAL-PRUF was used for flashing throughout the \$20,000,000 Electchester Housing cooperative. Architect: Benjamin Braunstein. Builders: Paul Tishman Company, Inc.



with non-critical Nervastral SEAL-PRUF®

Save your copper allotment for use where nothing else will do the job efficiently. For non-exposed window flashing, spandrels, cut-offs, etc., use Nervastral SEAL-PRUF.

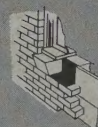
Nervastral SEAL-PRUF provides a degree of waterproofing comparable to copper, but does not require a mastic underneath because it is not affected by direct contact with Portland cement.

This completely different, homogeneous sheeting is tough, flexible, extremely elastic and pliable. It is lastingly waterproof and impermeable to moisture vapor. Nervastral SEAL-PRUF contains no organic fibres to break down and rot and will give many years of satisfactory service under the most extreme weather conditions. Laboratory tests confirm these facts.

Nervastral SEAL-PRUF is economical and easy to apply . . . cuts down labor costs. Type #30 is excellent for general construction in the residential housing field—28 mils thickness—rolls 72 feet long—in widths 36", 30", 24", 20", 18", 15", 12", 8". Special widths provided on request. Also available in Type #60 for heavier construction.

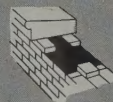
Nervastral is sold all over the country. Use coupon for name and address of nearest dealer and sample of material.

DOOR AND WINDOW FLASHING



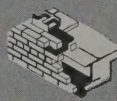
Nervastral SEAL-PRUF can be easily bent and shaped over irregular surfaces. Is unimpacted by subsequent settling of building.

PARAPET WALL WATERPROOFING



Nervastral SEAL-PRUF is excellent for waterproofing beneath copings and along the foot of parapet walls.

SPANDREL BEAM WATERPROOFING

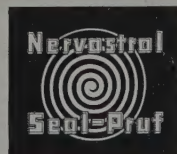


Nervastral SEAL-PRUF is ideal for this use as it is completely unaffected by laitance of Portland cement, and by acid in cinder concrete.

RUBBER & PLASTICS COMPOUND CO., INC.

30 ROCKEFELLER PLAZA,
NEW YORK 20, N. Y.

SEE OUR
CATALOG IN
SWEET'S



☐ Please send sample of Nervastral SEAL-PRUF and more information.

☐ Please send name of nearest distributor

Name.....

Company.....

Street.....

City.....Zone.....State.....

DOWNRIGHT DURABILITY



Asphalt Tile FLOORING

Sizes Available
9" x 9", 12" x 12"
and 18" x 24" in
1/8" and 3/16" gauges

FOR INSTALLATION IN

- Private Homes
- Office Buildings
- Housing Units
- Government Buildings
- Churches and Hospitals

Downright durability makes HAKO Asphalt Tile Flooring adaptable to any floor area—in any room—in any building*. It resists the wear of heavy traffic. It can be laid on or below grade. It is inexpensive. It is available in a wide range of clear colors from dark to bright, in solids, pastels and marbled effects. With HAKO feature strips and insert tiles, design possibilities are unlimited. Each HAKO Asphalt Floor Tile is color-true and precisely square.



Exact Specifications are furnished for application on any type of sub floor. See our catalog in "Sweet's".

*Use HAKO Grease Resistant Asphalt Tile Flooring where excessive grease is a problem.

HACHMEISTER - INC.
2332 Forbes Street
Pittsburgh 13, Pa.

Dept. AF

Please send brochure: "HAKO Asphalt Tile Flooring" and Architects' "Portfolio of Flooring Ideas", A.I.A. File No. 23D at no obligation.

Name.....

Address.....

City..... Zone..... State.....

Since 1903

HACHMEISTER-INC.
General Offices
PITTSBURGH 13, PA.

TECHNICAL PUBLICATIONS

"Interpreted in a broad sense," the report states, "there is not a separate construction loan market but only a mortgage credit market. . . . In effect, those builders are ineligible for loans whose plans . . . do not conform to the lender's conception of a standard mortgage risk. This may account for the unwillingness of many lenders to advance loans on low priced dwellings . . . under \$7,000 . . . even though the mortgage may be fully insured." Lenders reported no shortage of money, just a scarcity of "good" mortgage

HEATING. Electromode Catalog No. EC-63-1. Electromode Heaters, 45 Grouch St., Rochester 3, N. Y. 4 pp. 8 1/2 x 11".

Portable and built-in electric heaters are pictured and described in this concise catalog. Heating output in Btu's, wattage consumption and prices on the neatly styled models are included.

HEATING. Invisible Warmth, Catalog No. 55. The National Radiator Co., Johnstown, Pa. 4 pp. 8 1/2 x 11".

Six types of enclosed convectors are described and pictured in this catalog. Not only is convected heat created by the units, the publication states, but their heavy-gauge steel covers give off considerable radiant heat as well. Piping connections, roughing-in dimensions and convector ratings for steam or hot water use are listed. Data is also included on heat emission and venting.

AIR CONDITIONING. How to Have a Carrier Weathermaker Home. Carrier Corp., Syracuse 1, N. Y. 32 pp. 8 1/2 x 11".

This attractively illustrated booklet describes design modifications made possible by a season residential air conditioning. It points out that in homes where air is controlled completely through the year, windows, doors and partitions do not have to be situated for ventilation but may be placed wherever desired for privacy or view, favorable light and convenient living arrangement. Fixed sash can be used and screens and storm windows may be eliminated. The booklet maintains that with cross ventilation of no concern, complete floor plans may be laid out to provide maximum living space in proportion to costly outside wall area.

Featured in the publication is Carrier Weathermaker air conditioner, recently made available nationally. Little bigger than a conventional warm air plant, the Weathermaker is said to clean the air, cool or heat it according to thermostat setting, remove excess humidity and circulate air through the house. The design changes made possible by year-round air conditioning often afford construction savings which almost cover the additional cost of cooling over a conventional warm heating system, the booklet maintains.